DOCUMENT RESUME

ED 056 669 HE 002 669

AUTHOR	Perkin, H. J.
TITLE	New Universities in the United Kingdom. Case Studies on Innovation in Higher Education.
INSTITUTION	Organisation for Economic Cooperation and Development, Paris (France). Centre for Educational Research and Innovation.
PUB DATE	69
NOTE	236p.
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	*Case Studies; *Educational Innovation; *Educational Research; Evaluation; Experimental Colleges; *Higher Education; *Innovation

ABSTRACT

Since 1961, 24 universities and 1 university college have been founded in Britain and Northern Ireland to be added to the already existing 22 universities and 4 university colleges. The key word in the creation of these institutions has been innovation. This report is a case study of the struture of the new universities. It takes into consideration: (1) what is new in the new universities; (2) the British system of higher education; (3) why the new universities were created; (4) the pressure of numbers; (5) equality of education; (6) new maps of learning; (7) specialization in the new universities; (8) the government of the new universities; (9) the recruitment and status of the academic staff; (10) teaching and research; (11) teaching methods and assessment; (12) the role and status of students; (13) the new universities and the outside world; and (14) planning and finance. (HS)

CASE STUDIES
ON
INNOVATION IN HIGHER EDUCATION

new universities
in the
UNITED KINGDOM

by
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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

1969

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- *to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the world economy;*
- *to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;*
- *to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.*

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The members of OECD are Austria, Belgium, Canada, Denmark, Finland, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

FOREWORD

Whereas in the nineteen-fifties and the early sixties, the notion of "educational investment" attracted the greatest attention, it is now increasingly recognised that educational systems in general, and higher education in particular, cannot adequately respond to the needs of the economy and society unless they are subjected to more or less profound adaptations implying equally important innovations. Thus, in many ways, 'innovation' becomes the key concept in the development of education of the present and coming decades.

Innovation is not of course required or advocated for its own sake, but should be understood as a means for fulfilling functions or resolving problems of an urgent nature and which have so far been neglected. The term 'innovation' as it is used here, and as distinct from 'change', implies therefore purposeful orientation.

The subject covers a very wide range of topics. Innocations in practically all educational domains can be considered: curriculum, teaching methods, internal structures, administration, equipment, etc. Obviously, no single study can cover more than a fraction of this vast area and an appropriate delimitation of the field of inquiry is indispensable. It was therefore decided that a set of case-studies on innovations as introduced by a representative sample of major overall reforms of higher education and in some of the newly created universities represented the most suitable approach to a study of this problem.

It does not follow that a new university is necessarily an innovating university, or that an overall reform need be, in all circumstances, of a radically innovating nature. Furthermore, many important innovations – of curricula or of teaching methods for example – can be and are being introduced in existing universities and without calling for the promulgation of an overall reform. The fact remains, however, that in most cases these are the two basic tools used to implement innovation in the system as a whole or in some of its parts.

It is in this context that the OECD Committee for Scientific and Technical Personnel decided to include in its current programme a number of case-studies concerning problems of innovation in higher education in Member countries.

The present volume on new universities in the United Kingdom is the first of this series of case-studies to be published by the Organisation.

3

Annex

COMMON OUTLINE FOR THE PREPARATION OF CASE-STUDIES

The following general guidelines were given to the authors:

1. The case-studies should not be developed in terms of mere descriptions (of a particular reform or institution) or historical accounts; *they should be analytical and endeavour to present a critical examination,* the responsibility for which shall lie with the respective author(s).

2. The case-studies should represent a combination of an *institution- and problem-oriented approach* centred around the phenomenon of innovation. It is not the new institutions or reforms *per se* which should be reviewed and analysed and the case-studies should not engage in a theoretical discussion on problems of higher education, but emphasis should be put on the question of how the selected institutions or reforms innovate with regard to the particular problems of the common outline.

3. Each of the case-studies should deal with only a limited number of institutions or reforms, although in some cases a wider area may have to be covered, i.e. the inclusion of innovations taking place within other institutions, old or new. Such an extension would be justified in particular if the selected new institutions or reforms do not provide a sufficiently representative and significant picture of the innovating process as a whole.

4. Particular attention should be paid to innovations which have been in operation sufficiently long to provide the necessary elements for an adequate evaluation of their effectiveness. This evaluation should deal both with the intended and the unpredicted effects of the innovation. Where the time-factor does not allow for such evaluation, the analysis should concentrate on the declared or implicit intention of the innovators and also on any public discussions they may have generated.

5. An analysis should be made of the rationale behind all of the innovations and consideration given to such questions as to who were the initiators and what groups or factors provided support for or resistance to the innovations.

6. The common outline should be considered as a flexible framework; authors remain free to decide where, in view of the case considered and of its specific national or local context, the emphasis should lie, which points should be developed in depth and which should be discussed only briefly or omitted altogether. Many, if not all, of the points of the common outline are closely interconnected, possibly even overlapping. Given the nature of the subject, these interconnections are inevitable and their analysis will throw light on the innovating process as a whole.

The following common outline was suggested to all authors of case-studies on innovation in higher education, as undertaken within the programme of OECD's Committee for Scientific and Technical Personnel (CSTP). This outline was drawn up at a meeting of the Secretariat of OECD and the authors of the first five case-studies in May 1967.

A. *INTRODUCTION*

Specific objectives, scope of study, methods and data used, limitations.

B. *GENERAL CONTEXT*

i) short overall description of institutions or reforms selected for study;

ii) their place in the global context of the society and of the education system of the country concerned (including considerations on the status of the new institutions in relation to older establishments, e.g. problems of "upward mobility" of institutions of higher education.)

iii) factors and circumstances which led to their creation or promulgation; initiators, protaganists and supporting groups; resistance and opposition.

C. *PROBLEM-ORIENTED ANALYSIS*

a. *Coping with Increased Numbers*

There can be not doubt that this is the most important problem in the development of almost all higher education systems. In the framework of the case-studies questions of the following type should be examined:

- To what extent and in what sense was the promulgation of reform X – the creation of Institution(s) Y – directly motivated by the need to cope with the past or projected quantitative expansion of enrolments? (Was the pressure of numbers a primary or a secondary motive?) What statistical evidence can support the answer to this question and how has implementation of the reforms – or the building-up of the institution(s) – responded to original quantitative expectations?
- In case-studies on new institutions the problem of *size* should also be examined: what rationale, and other factors, determined the decision on the size of the new institution(s)? How is the problem of numbers being solved within the framework of the new institution(s) (e.g. sub-division of the institution in smaller more or less autonomous units as in the British collegiate or in the American cluster-college system)? What is the actual and projected rate of growth (slow or fast) of the new institution(s) and on what rationale is this growth rate based?
- In what way has the policy concerning the size of new institutions been translated into new architectural and building concepts?

b. *Equality of Opportunity*

The higher education systems of all OECD countries have to respond not only to the sheer pressure of numbers but also to the requirements of a more equal participation of the different social classes and population groups, of a better geographic distribution (regional), and of a better participation according to sex.

- To what extent do the analysed institutions or reforms provide new answers to these preoccupations? More specifically, have the reforms or the institutions under review been innovative with regard to admission requirements (problem of access to higher education), with respect to scholarship and other student welfare policies? Have any new measures been introduced facilitating not only access of students from under-privileged classes or population groups to higher education but also strengthening the chances of success of these students? To what extent does the location of new institutions respond to requirements of a better geographic distribution of post-secondary establishments (problems of the "university map")?

c. *Content and Structure of Studies, Interdisciplinary Approach*

Problems falling under this heading are widely discussed, and new solutions are being introduced, in all OECD countries. In a certain sense it might even be said that the most striking features of new institutions of higher learning, i.e. the most apparent deviations from the traditional pattern, lie in this field: creation of interdisciplinary programmes, combined degrees; obligation or possibility for students to take courses belonging to different disciplines (major, minor or supporting subjects); obligation or possibility for teachers to belong to two or more constituent units of the University, etc.

- What is the rationale behind this type of innovation introduced by the new institution(s) or reform(s)? How were the programme, plan and length of studies changed (curriculum reform)? Has a new pattern of examinations (degrees) been developed? Does the available experience show that original expectations could be fulfilled? What difficulties arose and/or how was the arrangement transformed under the influence of unforeseen factors and circumstances?
- Did the new curricula and the new structures of studies bring about new architectural and building concepts? Did they have an influence on a better utilisation of buildings?

d. *Specialisation of Institutions of Higher Learning*

The question is more and more widely raised as to whether a single institution of higher learning can offer courses in more than a few subject areas. In particular, many of the new universities try to specialize in a limited number of areas. At the level of higher education systems as a whole, the issue is not only specialisation by field of study but differentiation according to levels, geographic location and functions (e.g. creation of short cycle higher education).

- Has such a type of specialisation taken place in the institutions under review and, if so, what were the criteria for the choices made? Is there any relation between a particular specialisation and the geographic location of a given new institution?
- Do the analysed overall reforms contain any significant proposals such as the creation or strengthening of a new type of higher education functionally differentiated from the traditional types, and what were the rationale and the factors which led to the solution adopted?

e. *Organisational Structures, Institutional Autonomy, Administration and Management*

In many countries the existing organisational structures (e.g. division of universities into faculties) are considered as totally inadequate and innovations in this field, together with those concerning the inter-disciplinary approach, appear usually as the most revolutionary aspect of the new institutions. Related problems concern responsibilities of members of the academic staff, administration and management of institutions of higher learning as well as problems of institutional autonomy, of academic freedom and of State-University relations.

- What new organisational structures have been introduced (horizontal and vertical units and their interrelations)? What is the degree of organisational autonomy of the new units (on the one hand, internally, within the framework of the institution, and, on the other externally, in relation to the outside world)?
- What new approaches, if any, have the new institutions or the overall reforms developed towards the perennial question of university autonomy? Have the new institutions or reforms developed some new type of relationship between State and University, and if so, what were the consequences in the field of coordination of the new institutions with the rest of the higher education system? Have the new teaching methods or the new content of studies in some way modified the traditional concept of individual academic freedom ("Lerfreiheit")?
- How have the roles (authority, rights and responsibilities) of the various categories of the academic staff, (heads of department, chair holders, middle and junior staff level) been modified as compared with the traditional patterns? Can one speak of a new role of the faculty in the decision-making process in general and in the process of innovation in particular?
- What new administrative mechanisms have been set up? Are new scientific methods of administration (e.g. computer techniques) being extensively used?

f. *Recruitment and Status of Teachers*

For many countries the lack of qualified teachers represents the major bottleneck in the present and future development of higher education. A solution to this problem might depend, to a large extent, on better recruitment policies, improved salary conditions and career prospects. A related issue arises in connection with the instructional effectiveness of university teachers, and the criteria used for the appointment of such teachers.

- Have the institutions or reforms under review introduced new solutions in this field? Are candidates for teaching jobs sought outside the sectors which were traditionally supplying academic personnel (e.g. in industry)? Are conditions of employment of foreign teachers made easier? Have minimum academic requirements for employment (degrees, publications) changed and have criteria of teaching performance been adopted in the selection of staff?

g. *Teaching and Research*

One of the major criticisms made of higher education in most of the OECD Member countries refers to the balance between its teaching and research functions, to insufficient linkages between the two, to inappropriate conditions in which one or the other (if not both) have to be pursued and, implicitly or explicitly, to the connected problems of relations between under-graduate and graduate studies. Innovations in this area may pertain to numerous aspects and organisational components of the higher education system.

- How, in general, is the relationship between teaching and research and between under-graduate and graduate studies envisaged in the new institutions or reforms? What practical measures have been taken in the field of curriculum and degree requirements to implement these general principles? What arrangements have been made with a view to integrating (or differentiating) the teaching and research functions of the academic staff? If, in the older establishments major differences exist in prestige and working conditions between those occupied mainly in teaching (of under-graduates) and those in research (or work with graduates), have the new institution(s) or reform(s) changed this situation? How do enrolment growth rates (actual and projected) at the under-graduate level compare with those at the graduate level? Have any special arrangements been made to promote fundamental research as distinct from applied research? Is there any special effort being made with a view to training research workers ("teaching of research")? If the institutions and reforms under review are fostering research contracts with outside bodies (government, industry), what are the overall effects of this new relationship which is thus being built into higher education establishments?

h. *Organisation and Methods of Teaching; Teacher-Student relations*

It is very often said that one of the major weaknesses in present higher education systems is the lack of contact between professor and student, in other words, the depersonalisation of higher education. Many of the innovations introduced (both by the new institutions and by overall reforms) are intended to remedy this situation. The most obvious solution is to improve the teacher/student ratio, but this, for financial and other reasons, is also the most difficult solution and, in any case, only a partial one. Much will depend on the teaching methods: "cours magistraux", team teaching, tutorial system, seminar and small group work, utilization of new teaching media, the amount of time which the different categories of teachers actually devote to students both within and outside the class periods or formal "office hours", etc.

- To what extent does the teacher/student ratio (overall and by field of study) in the new institutions differ from the ratios in the older establishments? Can a more sophisticated indicator be established, comparing, for the traditional and new institutions, the size of classes, the length of time during which each student is in contact with his teachers, the number of courses (seminars, lectures), given by the various categories of teachers ("density of teaching")? What is the relative importance of formal and informal, organised and unorganised, contact between student and teacher?
- Which of the above-mentioned teaching methods (large-class lectures, seminars, tutorials, etc.) or what combination are given emphasis? Which method or combination is considered most and least effective

according to fields and levels of study (optimum size of class)? What role has been assigned to new teaching media? What is the new or proposed structure of the teaching staff (number in senior, middle and junior level categories and their respective roles with regard to students)? What are the new arrangements with respect to student orientation and counselling?

- What physical facilities have been provided to facilitate closer contacts between teachers and students?

i. *Role and Status of Students in the Academic Community*

Two types of problems should be raised under this point: *a*) those concerning the participation of students in the decision-making process within their respective universities or other institutions of higher education, and *b*) those concerning their living conditions, residence, and material welfare in general.

- What innovations concerning these fields have been introduced in the institutions or reforms analysed? Are the new institutions deviating from the traditional pattern, for example in respect to the role of students in the determination of the structure and content of programmes or of admission requirement? What mechanisms are being used to ensure increased student participation in the decision-making process? Did these innovations have any important effect on the phenomenon of "students' unrest"?
- To what extent do students participate in the innovation process itself; by what means?
- What was the rationale for deciding that the institutions under review should be resident or non-resident establishments, with or without a campus? Why has a particular type of residence (e.g. collegiate versus simple hall of residence) been adopted. How has the relation between resident and non-resident students been solved? How have the connected architectural and building problems been solved? What other innovations have been introduced concerning the material conditions of students (part-time employment, loans)?

j. *Higher Education and the Outside World*

In many countries a major complaint about higher education is the latter's relative isolation from the outside economy and society in general, and from industry in particular. Modern higher education establishments should in this respect fulfil, it is said, several types of functions all of which, in a certain sense, may be grouped under the heading "Public Service Concept". This implies a more active role in such areas as adult and continuing education, extension services, research contracts with government and industry, etc. But successful innovations in these fields might often require a radical change in the prevailing idea of the university, i.e. in the concept of its place and role within society.

- Do the new institutions or reforms embody a new concept of the functions of higher education within society?
- What contacts have been established between the new institutions of higher learning and the surrounding community? Which groups and sectors of the economy and society appeared as most (least) willing to

enter into co-operative arrangements with the new institutions? To what extent and in what way could the new institutions find support (e.g. research grants, scholarships, equipment) in industry and, *vice-versa,* what new services are they providing for industrial firms (e.g. refresher courses)?

- Has a new approach to adult and continuing education been developed?
- Have extended linkages with the outside world led to any unforeseen problems and difficulties? Did the creation of the new institutions have a latent stimulating effect on the surrounding community (not directly related to the organised and institutional contacts, e.g. creation of various new services, shops, cultural activities, entertainment)?

k. *Evaluation and Planning*

Need for improvement in these areas is felt very widely. New techniques are being developed (e.g. systems analysis) and special mechanisms are being built into new institutions or reformed systems (planning and/or evaluation units) in order to fulfil this need.

- What are the respective solutions implemented in the institutions or reforms under review? Is self-evaluation and self-study considered as an integral part of the administration and planning of the new institutions? What difficulties had or have to be overcome in order to strengthen the planning process (at the level of the institutions or of the system)? What measures, if any, have been taken to ensure compatibility between institutional and national planning objectives?

l. *Cost and Financing*

Most if not all of the innovations analysed have cost and financial implications which should be examined. This can be done either in connection with almost all the eleven preceding problem areas or under a special separate heading. If the former solution is adopted, there should be a summing-up section on this point. The types of questions to be raised in both instances are as follows:

- Have the different innovations generated additional or increased expenditure or, on the contrary, have they produced savings or decreased unit costs? Have they made new financial resources available (e.g. innovations in the field of university-industry relations)? How do the overall costs and financing mechanisms of the new institutions compare with those of the older establishments?

D. *CONCLUSION*

Summary of main findings of the study with particular reference to the most important innovations encountered.

CONTENTS

INTRODUCTION 15

Part One

THE NEW UNIVERSITIES AND THE BRITISH SYSTEM OF HIGHER EDUCATION

I. What is New in the New Universities 25
II. The British System of Higher Education 35
  i) *The Binary System* 36
  ii) *A Critique of the System* 45
III. Why the New Universities were created 55

Part Two

PROBLEMS OF INNOVATION

I. The Pressure of Numbers 79
  i) *Structuring for Growth* 81
  ii) *New Forms of Student Residence* 86
  iii) *The Integrated Pedestrian Campus* 90
II. Equality of Opportunity 101
III. New Maps of Learning 115
IV. Specialization in the New Universities 133
V. The Government of the New Universities 139
VI. The Recruitment and Status of the Academic Staff 151
VII. Teaching and Research 163
VIII. Teaching Methods and Assessment 171
IX. The Role and Status of Students 193
X. The New Universities and the Outside World 209
XI. Planning and Finance 221

CONCLUSION 239

Select Bibliography 249

LIST OF TABLES IN THE TEXT

1. Proposed Student Numbers in the First Ten Years 80
2. Actual Numbers of Full-time Students, 1961–68 81
3. Social Class of Fathers of Undergraduates 107
4. Type of School attended by Undergraduates 110
5. Distribution of UK Undergraduates by Home Region 111
6. Percentage of Women Full-time Students 113
7. Numbers of Full-time Academic Staff, 1966–67 157
8. Full-time and Part-time Advanced Students, 1966–67, arranged by Sex and Subject Group 166
9. Full-time Staff and Full-time Students, 1966–67 172
10. Part I or Preliminary Examination Results, 1967 (1966 Intake) . 187
11. Final Examination Results, 1967 (1964 Intake) 188
12. Final Examination Results: Inter-Universities Comparison ... 189
13. Exchequer Recurrent Grant, 1967–72 221

12

INTRODUCTION

> If there are to be radical changes or even interesting experiments, it would seem that these can emerge only in the newest universities of all. One of the most exciting features of the present day educational movement is the special creative opportunity that is open to the new universities, just where originality is urgently needed, and older universities are too committed to existing systems.
>
> Herbert Butterfield*

The 1960's have been the most prolific period for the founding of universities in the United Kingdom since the Middle Ages, if not indeed in history. In 1960 there were twenty-two universities and four university colleges in Britain and Northern Ireland. Since 1961, including those which have been raised to university status from amongst already existing colleges of higher education, no fewer than twenty-four new universities and a university college have come into existence. Thus between 1961 and 1968 the number of university institutions has been nearly doubled.

Though remarkable by any standards, this expansion is not quite so dramatic as it at first appears. The twenty-four university institutions of 1960 included four federal universities with a number of largely independent colleges, some of them on widely separated sites: London University, with thirty-three self-governing schools (apart from ten post-graduate institutes controlled by the University itself); the University of Wales, with four self-governing colleges in four different towns, plus the Welsh National School of Medicine; Durham University with separate campuses in Durham and Newcastle-upon-Tyne; and St. Andrews, with separate campuses at St. Andrews and Dundee. Thus, not counting the different colleges at Oxford and Cambridge (or indeed at St. Andrews and Durham) there were over sixty universities or colleges to which the student could apply for admission to a university degree course. Meanwhile, not all the twenty-five new university institutions of the 1960's are completely new, even as universities. The Universities of Keele (formerly the University College of North Staffordshire) and Strathclyde (formerly Glasgow Royal College of Science and Technology) were university colleges on the University Grants Committee's list of 1960, while the University of Newcastle-upon-Tyne (formerly

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* *The Universities and Education Today* (1962).

King's College, Newcastle) and the University of Dundee were constituent colleges of the Universities of Durham and St. Andrews. Ten more were previously Colleges of Advanced Technology able (since 1956) to grant Diplomas in Technology equivalent in standard to university degrees, to which we should add their Scottish equivalent, Heriot-Watt College, Edinburgh. Even the sole new university college of the 1960's, St. David's College, Lampeter, in Wales, was a much older college, founded in 1822, granted a royal charter in 1829, and allowed to grant its own (non-university) degrees in theology from 1852 and in arts from 1865, though raised to university status by being admitted to the University Grants Committee's list, under the sponsorship of the constituent College of the University of Wales at Cardiff, only in 1961.

Only nine of the twenty-five therefore, are New Universities in the full sense of completely new foundations, or ten if we include the University of Keele which, for reasons we shall see below, may be regarded as the mother of the New Universities, was originally founded as recently as 1949, and opened its doors to students in 1950. After Keele, in order of opening to under-graduate students, they are: Sussex (1961), York (1963), East Anglia (1963), Essex (1964), Lancaster (1964), Kent (1965), Warwick (1965), Stirling (1967) and the University of Ulster at Coleraine in Northern Ireland (October 1968). These ten universities are unique in British experience. First of all they are State foundations. All the rest, with perhaps one exception, were founded by individuals or bodies other than the State, and trace their origins either to the spontaneous migration of groups of medieval scholars to such places as Oxford, Cambridge or St. Andrews, or to private or corporate benefactors as in the case of London and most of the great and small civic universities of this century and the last, or, as in the case of most of the new universities of the 1960's, have grown out of colleges of higher education financed and controlled by the Local Education Authorities. The one possible exception is the University of Belfast, which was founded by the State in 1845 as one of three secular university colleges, the Queen's Colleges of Belfast, Cork and Galway, linked together as the Queen's University of Ireland in 1850, in an unsuccessful gesture of conciliation to the Irish. Cork and Galway became part of the National University of Ireland in 1908, and later came under the Free State (now Republic) of Eire, while Belfast became a separate University. Belfast apart, only the ten New Universities have been founded by the State, with full State support from the beginning not only for their recurrent or running expenses but for their capital outlay on buildings and equipment as well.

Secondly, apart from the ten, all the modern universities, including Belfast, founded since London and Durham in the 1830's, have passed through a period of apprenticeship or tutelage as colleges which either could not offer degrees at all or could offer only the degrees of another university, mostly since 1858 the external degrees of London University. This meant that most of the new universities of this century and the last have passed their formative years in bondage, working to a syllabus and sitting for examinations over which they had no control. Only the ten New Universities have enjoyed the right from their foundation of granting their own degrees and therefore of planning and controlling from the start their own curricula and methods of assessment, and, indeed, their own structure and organisation.

These two characteristics, State foundation and finance and the right to grant their own degrees and determine their own development, make the New Universities unique. They alone amongst modern foundations have enjoyed from the beginning both the capacity and the liberty to experiment in every aspect of university education. What is new about the New Universities, therefore, is their freedom to innovate. The hope and expectation that they will seize the opportunity to carry out substantial innovations are the *raison d'être* of this report.

In a sense, of course, all universities are in the innovation business. They exist for innovation. The ends which they pursue, or ought to pursue, are all innovatory: the advancement of learning, including the discovery of new knowledge and the preservation and re-interpretation of the old; the education of the young in the light of that learning to take their place in society and contribute to its well-being and their own by creative work and leisure; and the service of society as centres for the spread of knowledge, the solution of problems, and the criticism of ideas and values. In all three they represent the institutionalization of innovation, in scientific research and intellectual reflection, in the educative process by which society renews itself and its leadership in every generation, and in the constant reappraisal of its ends and needs.

Yet just as universities are often accused of studying everything but themselves — an accusation which some of the New Universities, amongst others, are trying to refute — so they may sometimes, with justice, be accused of being prepared to change everything but themselves. In theory all British universities, once they have attained full independence, are as free as the New Universities to innovate in university education. Many of them do so, to the extent that most of the innovations we shall find in the New Universities have been foreshadowed or attempted in a piecemeal way in older universities. Why then is wholesale innovation comparatively rare in the older foundations? One reason is that piecemeal innovation is so continuous there that the need for wholesale and far-reaching change is comparatively rarely felt. But a more important reason why major reforms are so rare is that British universities are, paradoxically, too free and too democratic. Within the very wide limits set by increasing dependence on State finance and by the need to obtain the approval of the Privy Council, acting on the advice of the University Grants Committee, for any change in the instruments of government, a British university is a self-governing corporation and can do what it likes. But there are too many interests within the university which have to be consulted and converted or placated before any substantial change can be effected. In Oxford and Cambridge, where academic democracy, entirely free of lay (i.e. outside, non-academic) control, extends not only to every member of the teaching faculty but to the graduates holding master's degrees as well, change is most difficult of all. In the past a Royal Commission backed up by an Act of Parliament has been the only effective instrument of major reform. Elsewhere the supreme governing body is normally a lay-controlled Court of Governors (or Conference in Scotland) and change could in theory be imposed from above. In practice, however, the real power in academic and most other affairs is in the hands of the Senate (or Academic Council in Scotland), usually composed of all the professors together with a minority membership of non-professorial staff, and nothing can be changed without their consent or, in most cases, their initiative, while the rest of the non-professorial staff expect at least to be consulted through their Faculties or Boards of Studies. This no doubt is as it should be, since professional decisions should be made by professional experts, subject to the acquiescence of the lay representatives of the general public. But the effect of these professional and democratic safeguards is to spread the power of veto on major reforms throughout a large and elaborate machinery of government. The older and larger the university, generally speaking, the more numerous and conservative are the interests which can veto any major change. This was brought home vividly to the author when he served on the Committee for the Revision of the Charter and Statutes of the largest of the civic universities. After more than three years and forty meetings of hearing evidence, arguing principles, discussing alternatives and working out compromises, the draft constitution was presented to the constituent bodies, only to be rejected (if temporarily) by the interests, most of whom wished to re-open the discussion at the point from which it started.

If resistance to change characterizes old-established universities, it is not unknown at old-established colleges which are transformed into universities. While it is true that the civic university colleges most recently released from what the Principal of London University called the "rather stiff apprenticeship" of its external examinations – Southampton (1952), Hull (1954), Exeter (1955), and Leicester (1957) – have gained enormously in self-confidence and academic stature, they have moved only slowly and cautiously away from the traditional pattern of specialized courses and departmental organisation, and would scarcely wish to claim a place in the vanguard of innovation. Still less have the more recently transformed Colleges of Advanced Technology led the field in reform, since their main aim, understandably, has been to prove themselves the equal in all respects of existing universities, to the point in most cases of dropping the word "technology" from their titles, broadening their range of subjects to include social studies and sometimes even arts faculties, transferring to new sites outside the industrial cities which gave them birth and vocational purpose, and adopting names indistinguishable from those of traditional universities: the University of Bath, Bradford, Surrey and so on. Having grown up in an atmosphere of aspiration to university status, they unite the conservatism of maturity with the conformism of the newly arrived, anxious to prove their credentials by their orthodoxy. Innovation, where it occurs, chiefly takes the form of introducing new subjects in fashionable demand, such as sociology or management studies, within the traditional framework. Their problems are in the main the problems of transition and adjustment to their new status and responsibilities, which may indeed be greater and more challenging than those of virgin birth. As such, along with the similar problems of the Polytechnics newly designated from amongst the Local Authority Colleges of Technology which are to be allowed in selected subjects to award the degrees of the Council for National Academic Awards, they are the subject of another report to the OECD by Messrs Tyrrell Burgess and John Pratt of the Unit for Economic and Statistical Studies on Higher Education in the London School of Economics and Political Science.

Amongst British universities, then, the ten New Universities have in the fullest degree the opportunity, the means and the motivation.

Founded on extensive new sites in beautiful countryside on the outskirts of comparatively small communities which have actively campaigned for and welcomed their establishment, they have in the main been able to attract young, energetic, forward-looking staff who have in most cases come to try out new ideas and methods of teaching and research, or at the very least to get away from the conservatism and frustration of the older universities. More important than that, a New University begins, inevitably, with a *tabula rasa* which has to be covered with plans which, in the absence of externally imposed curricula and examinations, might as well be new rather than old. And, for the first few years at least, the conflicting interests — though new ideas clash as violently as do old ones — are few and small enough, and sufficiently imbued with the hopefulness of pioneers, to reach agreement on new and unorthodox solutions to old problems. How long this honeymoon of flexibility can last in a new institution will depend no doubt on the people concerned, and how quickly they learn to frustrate each other: some new Vice-Chancellors we interviewed put it at ten years, some at five, while one or two saw resistance to further change growing from the day the university opened. But for a period, varying from the antenatal planning stage alone to the first decade or so after admitting the first students, the New Universities are the best hope of substantial innovation in the British system of higher education in the last century and a half.

Whether they fulfil that promise will not depend only on the academic and administrative staff they have been able to attract away from existing institutions. Since the most important decisions must be made before all but the most senior staff have been appointed, it will depend most of all on the Academic Planning Boards which chose the Vice-Chancellor and drew up the original outline plans of the structure, organisation, range of subjects, and general academic aims of each New University, and advised on their translation into buildings and equipment. (At Keele the same role was performed by a similar body, an Academic Council, on which the majority sat not as individuals but as the representatives of the sponsoring universities, Oxford, Birmingham and Manchester). These Academic Planning Boards, a uniquely British innovation, nominated by the University Grants Committee but appointed by the local Sponsoring Committees which originated the campaign and application for a university in each area, will be discussed in their place. Meanwhile, the importance of these *ad hoc* Committees of eminent academics and administrators from other universities can hardly be exaggerated, both as the main instrument of innovation and as the main curb on excessive or outlandish change. They were the principal link between each New University and the rest of the university system, and the chief guarantee that, however, innovatory the new institution became, it would still remain firmly in the British tradition of what a university ought to be. To this extent the freedom of the New Universities is not the Rabelaisian freedom of "Do what you will", but, to paraphrase Alexander Pope,

"What is freedom? Rightly understood
An academic licence to be good."

In short, the New Universities are free to innovate, but only within what many foreign observers may consider to be the rather narrow confines of what the British call university education.

The innovations studied in this report, therefore, will be defined as innovations within the British context. In the sense in which it is used here, an innovation means any mode of pursuing or facilitating the pursuit of the ends of university education – research, teaching, and service of the community – which is new, or substantially so, in British higher education. The net will be cast wide, in the belief that the fish so caught can always be rejected, whereas those not caught escape inspection altogether. Methods familiar elsewhere may be quite new to Britain, and have a significance or an effect here which is unfamiliar. Approaches tried in Britain before may still have the status of re-inventions or resurrections of forgotten ideas. And innovations not peculiar to the New Universities will still be worth discussing, as general examples within the particular context of a new and more flexible environment.

The range and scope of the innovations to be discussed have been laid down in the outline plan of the national case studies agreed at the meeting of authors and experts called by the Directorate for Scientific Affairs of the OECD in Paris, 17–18 May 1967. This was meant to provide a comprehensive framework within which every kind of innovation could find a place. The broad categories of the framework are those covered by the chapters in Part II below:

1. The problem of numbers, and the methods of coping with them, including here innovations in buildings and the physical environment.
2. Equality of opportunity, or access to education, by social class, sex, and regional distribution of the population.
3. The content and structure of academic courses, with emphasis here on the interdisciplinary approach and the reaction against the peculiarly British problem of over-specialization.
4. Specialization by the New Universities, and the extent to which they they have introduced new subjects of teaching and new areas of research.
5. The government, organisational structure and management, and the relations of the New Universities and the State.
6. The recruitment and status of teachers in the New Universities.
7. The balance between teaching and research.
8. Teaching methods and staff-student relations.
9. The role and status of students.
10. The New Universities and the outside world.
11. Planning and finance.

The methods of study, data-collection and analysis under these headings have necessarily been limited by the time and manpower available; the spare time of one professor with a full load of teaching and administration and the full time of one young research assistant over ten months, including the writing of the report. In the six months, July–December 1967, which were available for the assembly of the evidence, any pretence at original research, in the form of systematic, on-the-spot observation or of an empirical, tested and validated questionnaire, was out of the question, especially since the first three out of the six months fell in the long vacation when few academics or students were in residence. The principal method employed, therefore, was the personal interview with persons in each university responsible for or involved in innovations. Every New University except Ulster (which did not admit students until October 1968) has been visited at least twice, and several three or four times. At each of them we interviewed, and in most cases tape-recorded, the most senior administrative officer available, either the Vice-Chancellor or the Registrar (or Secretary, as he is called in several of them). We also interviewed a large number of other administrators, professors, and other academic staff, and a representative selection of students, amounting to over two hundred persons in all. I also interviewed Lord Murray of Newhaven, now Chairman of the Leverhulme Trust and who, as Chairman of the University Grants Committee, 1953–1963, was the man most responsible for the founding of all the New Universities except Keele. The second method was the collection, from the New Universities themselves, of a large body of written, printed and duplicated documentation on all aspects of their origins, aims, current work and forward planning, including much of the statistical information scattered throughout the report and copies of the Charters and Statutes discussed in Part II, Chapter V. Thirdly, we requested from the University Grants Committee, who very kindly supplied, the basic statistics of student numbers given in Part II, Chapters I and VII. Finally, we assembled a substantial bibliography of publications on the New Universities and their innovations. Much of this was ephemeral and of no great interest or merit, and what appears in the Appendix is a select bibliography. This was compiled by my research assistant, Mr. Douglas Chivers, who also did a substantial part of the interviewing and the collection of other material.

The limitations of a short-term study of this kind will be obvious to the reader. It does not pretend to be more than a still photograph of some aspects of the New Universities in the United Kingdom at a very early stage of their development in the second half of 1967 when, apart from Keele, the oldest was only six years old, four of them had yet to produce their first crop of first degrees, one was just beginning its first year of teaching, and one had yet to open its doors. In so far as the author has experience of all three major types of English university – Oxbridge, civic and New – and in a former capacity as Convenor of the University Development Committee of the Association of University Teachers had to consider the planning and expansion of the university system as a whole, it is not, he hopes, an uninformed picture. But in so far as he is not a professional student of higher education it is necessarily an amateur one, with all the limitations which that implies. Its saving grace, he hopes, is that it has the virtues of the amateur product, a passionate interest in and concern for the subject, university education in general and its advancement by fruitful innovation in particular.

Before plunging into the main part of the report, I should like to take the opportunity of thanking all those many people in the New Universities who have given so generously of their time and assistance to make this study possible. With them I should like to couple the name of Lord Murray of Newhaven, and his colleagues on the University Grants Committee, without whose imagination and foresight the New Universities would not have come into existence. I should like to thank Mr. R.C. Griffiths, Deputy Secretary of the UGC, for supplying statistical information. I must also record my gratitude to my research assistant, Mr. Douglas

Chivers, one of the first graduates of the New University of Lancaster and a pioneer of its Student Representative Council, for his unfailingly cheerful and efficient help, and to my part-time secretary, Mrs. Kathleen Buckley, for her impeccable typing of various drafts and patient good humour. Finally I should like to thank the Directorate for Scientific Affairs of the OECD for making possible what, in a busy life at a New University, I would not otherwise have undertaken, a study tour of the other New Universities of Great Britain.

Part One

THE NEW UNIVERSITIES AND THE BRITISH SYSTEM OF HIGHER EDUCATION

I

WHAT IS NEW IN THE NEW UNIVERSITIES

The New Universities are already a well-recognized category in British higher education, and are distinguished by that name not only from the older universities but also from the new technological universities (the ex-colleges of advanced technology) and other pre-existing institutions newly raised to university status. This is because, although they differ considerably in detail, they have more in common with each other than they do with the rest of the university system.

Their two most important common characteristics have already been mentioned: they were founded by the State, with government finance from the start for capital purposes as well as income, and they have had the power from the beginning of conferring their own degrees and so of determining their own curricula and methods of teaching and examination. From these two principles flow all their other distinctive characteristics. In the first place, since the University Grants Committee responsible for disbursing Government money to the universities selected the area and approved the site in every case except Ulster (where the Lockwood Committee, as we shall see, selected the area and site on exactly the same criteria), and since it considered that there were already enough universities and colleges of advanced technology in the large industrial cities, the new ones are all on the outskirts of small or medium-sized towns, usually with little or only light industry. The one possible exception to this is the first, the University of Keele, which was founded by and in the vicinity of the city of Stoke-on-Trent (half-way between Birmingham and Manchester), then the largest conurbation without a university. But "the Potteries", as the area is called from its famous pottery industry, which produces about 90% of the country's earthenware and porcelain, are really seven or eight small towns in North Staffordshire, loosely federated into a city only in 1910, together with the adjacent medieval borough of Newcastle-under-Lyme. The University is situated on a large, isolated estate of some 600 acres, three miles from the latter, and on the far side from the industrial city. In its rural surroundings, self-contained campus, and physical detachment from its maternal community it is as similar as it could be to the later New Universities.

All the New Universities are "campus" universities, on large, self-contained sites. The later ones have benefited from the UGC's insistence that the promoters should be able to provide a site of at least 200 acres, with sufficient space for all the facilities, including playing fields and some residential accommodation, required by a university of at least 3,000 students, which it considered to be the "minimum viable size". A site of this magnitude, at modern British land prices, could be reasonably obtained only outside a built-up area, and more conveniently on the outskirts of a small rather than a large town, thus confirming the UGC's preference for smaller, less industrial communities. Hence the University of Sussex stands on 208 acres of parkland at Falmer, four and a half miles from Brighton, the well-known south coast resort 50 miles from London. The University of York has a first instalment of 190 acres at Heslington, one and a half miles from the city, once the capital of the government of the North, and more recently known for its railway workshops and chocolate factories. The University of East Anglia has a 272–acre site at Earlham, two miles from the centre of Norwich, the county town of Norfolk, and the East Anglian metropolis, which has a great deal of light industry, such as fruit and vegetable canning and agricultural engineering. The University of Essex stands in 204 acres of Wivenhoe Park, two miles from Colchester, near the east coast, 54 miles from London. It claims, as Caractacus's headquarters against the invading Romans, to be the oldest recorded town, and is now, fittingly, an army garrison-town. The University of Kent stands in 270 acres of grassland on a hill directly overlooking the small, ancient city of Canterbury, scene of the conversion of the English to Roman Christianity and seat of the premier Archbishop, and well-known to Continental tourists as the first stop on the road from Dover to London. The University of Warwick has 417 acres of farmland two and a half miles from the City of Coventry, famous for its motor vehicle and bicycle industries, and 18 miles east of Birmingham, the capital of the Midlands. The University of Lancaster has 450 acres overlooking the Irish Sea at Bailrigg, two and a half miles south of Lancaster, the ancient county town of Lancashire (now superseded by Preston, 25 miles further south, and nearer the more densely populated southern part of the county). The city, the traditional rival of York on the other side of the Pennines, has linoleum, plastics and rayon yarn factories.

In Scotland the University of Stirling is on the 300-acre Airthrey estate, two miles north-east of Stirling city, where once the Kings of Scots held court and parliament, and now a small commercial and residential town 27 miles north-east of Glasgow and 37 miles north-west of Edinburgh. In Northern Ireland the New University of Ulster will occupy 300 acres at Coleraine, a small market town with a large American man-made fibres factory, near the centre of the northern coast.

All the sites without exception are in beautiful countryside, unencumbered by industrial development, yet all within easy reach by road, or even on foot, of old-established communities. Unlike the colleges of Oxford, Cambridge, St. Andrews or Durham, they are not intertwined with their small communities, dominating them and their daily activities. Nor are they encapsulated, like the older civic universities, in much larger industrial cities which dominate them. For better or worse they are detached, self-contained entities — villages or, potentially, small towns in themselves — physically distinct from their adjacent communities. At the same time they are not alien bodies imposed on a reluctant host. The local communities have not merely welcomed them but have actively campaigned for the privilege of having a university and have backed their applications with substantial financial support.

In the years immediately after the Second World War, at least half a dozen different areas set up university promotion committees, of which only North Staffordshire was successful. Between 1956 and 1960 no fewer than 28 localities, 20 in England and 8 in Scotland, made submissions to the UGC, out of which only seven in England and one in Scotland were successful. In Northern Ireland three areas made applications to the Lockwood Committee in 1963–65 for the proposed New University of Ulster.

What the promoters hoped to gain for their area was presumably prestige, intellectual and cultural stimulus, and a certain amount of economic benefit in the form of employment opportunities and consumer demand. Whether the achievement of a university lived up to their expectations we must discuss later in the appropriate section (Part II, Chapter X), but there can be no doubt that the social and policital leaders of each community were eager for a university and were willing to pay for the privilege. In every case except Stirling the site was donated by local citizens, either collectively through the Local Authorities or by individual donations of land or purchase money. Brighton Borough Council gave Sussex University Stanmer Park plus an additional 49 acres. The Joseph Rowntree Trust (founded by the family owning one of the chocolate factories) gave York University Heslington Hall and 17 acres, and the rest of the site was purchased out of the appeal fund. Norwich City Council gave East Anglia 165 acres, to which an anonymous local donor added a further twelve. Essex County Council gave the site for the local University, as did the City of Lancaster for their. The County of Kent and the City of Canterbury shared the cost of the site of their University, as did the County of Warwick and the City of Coventry, and the North Staffordshire Local Authorities, of theirs. The site of the University of Ulster was presented by the Coleraine, Portrush and Portstewart Local Authorities. Only in the case of Stirling was the site provided by the State, and there it was presented by the Secretary of State for Scotland on behalf of the larger but still in a sense local community of Scotland. In addition the Local Authorities all gave generous annual grants out of the rates (local taxation), ranging from £36,000 for the University of York to £122,500 for Essex, which were especially necessary in the "ante-natal" years before they admitted students and were able to earn recurrent grant (annual income for non-capital expenditure) from the UGC.

On top of all this the New Universities launched appeal funds for capital expenditure not paid for by the UGC, notably (until the policy was recently modified) for student residence. These appeals were answered by local donors as well as by large national companies, and raised sums ranging from £1 million to over £2 million. These large capital gifts must be remembered when we talk of foundation by the State. In former times they would have been sufficient in themselves to build and endow a considerable college. The rising scale and expense of a university and its activities, especially in the laboratory sciences — for which the basic stock of teaching and research buildings now costs at least £6 million — has made it impossible for private donors to bear the whole cost. The universal success of New University appeal funds is a measure of the welcome given to them by their local communities.

The university campus, of course, is not and cannot be completely isolated from the local community. Except in the case of Keele, which attempted until recently to house all its academic and administrative staff and students on the site, most of the students and nearly all the staff have to live off the campus in the surrounding community. Before permanent buildings were erected this would have been inevitable, but it was made more so by the UGC's policy, now partially modified, of not providing public money for residence for students at the New Universities while so many at the older ones were forced to live in lodgings or at home. For this reason one of the UGC's criteria for approving an application was an adequate supply of cheap, suitable lodgings, to house all the students for the first few years and a substantial proportion for many years to come. Large numbers of students living in their midst were therefore the most visible evidence to the local inhabitants that the University had arrived — an experience which in some cases somewhat dampened their enthusiasm for the project. On the other hand, the influx of interesting, if not always like-minded, academic neighbours, their support for local societies and adult education, and the boost to the retail trade and the employment of secretarial and technical staff, were more than welcome in most of these small communities, where a university represented a large-scale enterprise.

On the campus itself, the most striking feature of the New University is its newness. Everywhere in British universities new buildings are rising, and bulldozers and earth-movers, concrete mixers and air compressors have become the permanent accompaniment to the lecture, tutorial or "quiet" hour in the library. In the New Universities, however (and of course in those ex-colleges of advanced technology which are moving out to new sites), it is not only the buildings which are new. The whole man-made environment — roads, footpaths, lawns, newly-planted trees and shrubs, playing fields and car-parks — is new, and freshly risen from the rural landscape. In an old industrialized, much built-over country like Britain the only comparable transformations of a whole landscape are the score of New Towns built since the Second World War, also designated and financed largely by the State. Like them, each New University is a freshly minted urban community on a more or less virgin site. This gives it the opportunity not merely of experimenting with particular buildings but of creating *ab novo* the whole physical form or material expression of the concept of a university. Never before has a university enjoyed so much freedom to create itself according to its own ideal.

The opportunity has been seized by each of them in different ways. Keele, which was handicapped by the lack of assured funds for forward planning in the unexpansionist 1950's, had least opportunity in the critical early stages to plan comprehensively. The effect of this shows in the variety and inconsequence of its buildings. Nevertheless, the ground plan is rational, if unimaginative, and the result is a compact little "town" of various styles and periods in which, more than in the rest so far, every service and facility from teaching blocks to halls of residence for the students and houses for the staff exist side by side. Amongst the rest, Sussex is the most handsome and complete, having already passed the minimum viable size of 3,000 students in seven instead of ten years, and having been built in a uniform style of warm red brick capped by a recurring, contrapuntal concrete arch by Sir Basil Spence, one of the most aesthetic of British architects. Here the opportunity was taken for the first time of planning a whole university for the automobile age, by segregating pedestrians from traffic. The campus is built for human beings to human scale with buildings grouped largely around a pedestrian "great court", its vistas closed by sculptural punctuation marks, and accessible by footpath to all parts, including the residential "Park Houses".

To some extent all the rest have attempted to segregate pedestrians and traffic, and to create a physically integrated community. York has adopted a traditional campus plan not unlike some of the younger civic universities, such as Nottingham or Leicester, with buildings scattered somewhat haphazardly, but even there they are connected by covered pedestrian ways. East Anglia has planned and begun a continuous, serpentine teaching block in which each subject area runs into the next, connected externally by an offset, elevated pedestrian way linked to the upper floors by bridges. Essex is the most ambitiously futuristic, with vertical segregation of pedestrians and traffic, the whole university complex being built around five "podia" or platforms, the size of a small Italian piazza, twenty-five feet above the floor of the valley roadway. Lancaster is an intelligent compromise between vertical and horizontal segregation, with a closely integrated urban complex of college, laboratory science, administrative and other buildings strung along a half-covered pedestrian "spine", opening out here and there into squares with shops, coffee bars and "pubs", and served by an underground tunnel (only one of which is yet built) every half mile for access by public transport. Kent has pedestrian ways between its large colleges, in which teaching and residence are integrated. Warwick will ultimately have elevated pedestrian ways, only one of which, a short bridge between the library and the first permanent teaching block, is yet built. Stirling's first building is really a group of single-storey teaching, research, social and office buildings connected by internal covered ways, and its future growth will be on a pedestrian campus around a serpentine loch (or lake) with footbridges. The development plan for the University of Ulster is being prepared by the same architects as York and Stirling, and will probably follow similar lines.

Within their development plans the New Universities have been free to experiment with both the function and the construction of individual buildings. Several of them, notably York, Sussex, East Anglia and Stirling have adopted in part or in whole what are in British universities (though not in British schools) comparatively new methods of industrialized building with prefabricated or factory-made components. These, and especially the most uncompromising system in use at York, the so-called CLASP system borrowed from the schools, will be discussed in their proper place. As to functional innovation, the most significant developments have taken place in student residence and other facilities. In the provision for student residence the major trend (as in some older universities, for example, the Owens Park student village at Manchester University) is away from the traditional hall of residence with its expensive but under-utilized social and catering facilities, and either towards a more informal grouping of study bedrooms with minimal services other than those provided centrally by the university, or towards the complete integration of residence with teaching and other central facilities. In both trends there is some attempt to break down the traditional discrimination in treatment and social advantages between students living in and those living out. Amongst those favouring the first solution, Essex is building tower blocks of studies and study-bedrooms arranged in flats each occupying a whole floor and shared by eight fully residential students and up to twenty others who share studies, kitchen and communal living space but sleep in lodgings at night. East Anglia has a similar grouping of twelve students on each floor of its "ziggurats" or stepped pyramids built on the sloping hillside below the continuous teaching block. The Sussex Park Houses are blocks of study bedrooms with small kitchens and a television lounge but mainly using the nearby central refectory and social facilities. Warwick has staircases of study-bedrooms grouped around large, social, non-residential halls for a thousand or more students (only one of which, Rootes Hall, is yet built).

The most interesting development in this area, however, is the second trend, towards the integration of residence with teaching, by the revival of the college principle at York, Kent and Lancaster. This is not strictly an innovation, since the college as an integrated teaching and residential unit is an ancient device at Oxford, Cambridge and St. Andrews, and was adopted in a modified form in the 1850's at Durham. (The self-governing, federated colleges of London and Wales are in effect independent campuses mostly without residence except in their own, detached halls of residence). Its revival is significant, however, since the general evolution of British universities in modern times has been on the Scottish model of non-residential, unitary, civic institutions, with detached halls of residence as an afterthought, when they ceased to cater mainly for students living at home. The colleges at the three collegiate New Universities are not imitations of the Oxford or Cambridge college, since they are not endowed and are not responsible for selecting or teaching the students. They are chiefly a device for breaking up the large, amorphous student body along other than academic lines, into smaller units of from 300 to 600 students, mainly for social, residential, welfare and disciplinary purposes, and bringing them into closer contact with the staff and with students studying other subjects. Only a proportion of the students, from a third to a half, together with a small number of staff, will live in the college, but all will be attached for meals, common-room, sports and other social purposes. All the non-laboratory subject teaching will take place there, much of it of course to members of other colleges. The advantages and disadvantages of the college system will be discussed below in the appropriate sections.

Easily the most important characteristic of the New Universities is their readiness to experiment with what is taught, in what combinations, and with different methods of teaching and assessment. Here we are in an area in which all universities are continuously innovating, and we must be careful not to attribute the credit to the New ones for innovations which originated elsewhere. In the world of higher education there is nothing strictly new under the sun, and almost any subject, combination of subjects, method, device or technique has a precedent to follow somewhere in the world. What is academically new in the New Universities is the systematic, wholesale application throughout a complete institution of ideas which have normally been applied only piecemeal elsewhere. In particular there has been in all of them some attempt to tackle systematically the peculiarly British — or rather, since the Scots and to some extent the Welsh have a broader tradition, the English — problem of too early specialization, and to provide a broader education not merely for some but for all their students. The extent of the broadening, and the rapidity with which narrowing takes place after the first year or so of the course, varies markedly between and even within universities, according to the educational philosophy behind the syllabus. All this will be discussed in its proper place.

Meanwhile, it can be said that broadening the syllabus has implications far beyond the educational benefit to the students, in the field of manpower planning to meet the economic needs of the nation. Professor Mark Blaug of the London University Institute of Education has recently pointed out that manpower supply could be more accurately predicted and its supply influenced over a shorter period if the student's final choice of vocational specialization could be delayed as long in Britain as in most other advanced countries.* In so far as one of the effects of broadening the syllabus in most of the New Universities is to delay the choice of specialist subject until the student can choose with confidence and experience of it, these universities have a contribution to make to educational and economic planning.

Other academic innovations widely applied in but not exclusive to the New Universities include new methods of teaching, examination and other kinds of assessment, some new subjects of teaching and/or research, and a new concern with evaluating the effectiveness of the educational process by conscious self-study. All these will appear below.

The new framework of studies and organisation of student life and work have imposed upon the New Universities unorthodox patterns of administrative structure. This has not much affected the higher reaches of university government where, except at York, the traditional hierarchy of Court, Council and Senate (or their Scottish equivalents) has been adopted with slight modifications. The lower echelons of government, however, have in most places broken completely away from the traditional structure. Sussex, East Anglia and Ulster have abandoned faculties and departments, and substituted schools of studies, somewhat loose and sometimes overlapping groups of subjects without separate heads of department. Essex has retained departments, but grouped in schools of studies, and Kent has retained faculties, but which act very mcuh like schools of studies. Keele, Lancaster and Stirling have retained departments, at least in name, but have subordinated them to boards of studies with considerable powers of co-ordination. Only at York and, in spite of the use of the term school, at Warwick does the department still flourish in all its old autonomy. Departmentalism, in the sense of a jealous loyalty to one's own specialism and a demand for independent control over courses and research in it, dies hard in academic man, however, and we must enquire in the appropriate section how far it has survived the new administrative structures meant to diminish it. The collegiate universities, York, Kent and Lancaster have also had to incorporate the colleges within their system of government, thus creating a second hierarchy of constituent bodies, with a consequent proliferation of committees and meetings. In both hierarchies at all levels up to the Senate, Council and Court the non-professorial staff play a considerable part alongside and sometimes in the absence of the professors. Recently in most British universities interest has shifted to the students' demand for participation in government. The New Universities have been much affected by this movement, and some of them, notably Sussex and Lancaster, have led the way in meeting the demand for representation.

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* M. Blaug, "Approaches to Educational Planning", *Economic Journal*, June 1967, LXXVII, esp. pp. 278–85.

Finally, the New Universities have been facing up to much the same problems of management and administration, cost control and productivity, and expansion with inadequate resources as other British universities, though perhaps aggravated by a greater rate of expansion than elsewhere. The biggest problem has been and continues to be the demand by the State – the Treasury, the Department of Education and Science, and Parliament itself – for a greater output of graduates at lower cost and for a closer control over the huge sums of public money, now running at over £200 million a year, which the universities have until this year (1968) received and disbursed without accounting in detail to the public. Whether in this area, where spending whether on salaries, books, buildings, furniture, equipment, travel for research purposes, and so on is increasingly controlled by the University Grants Committee, any single university is capable of making a major innovation is perhaps doubtful. The trend is inevitably for the universities to get together, either regionally through consortia on organisation and methods or on building standards and technique, or nationally through the Committee of Vice-Chancellors and Principals and its specialist sub-committees, as well as its newly-formed Joint Consultative Committee with the Association of University Teachers, which called a conference on productivity in the universities in the Spring of 1968. The New Universities have played a full part in these, in spite of their youth and inexperience, or perhaps because their Vice-Chancellors, along with those of the new technological universities, represent an influx of new and vigorous blood at the co-ordinating centre of the university system. At all events, those of York and Lancaster have taken the lead in forming consortia of universities in the north-east and the north-west for the study of organisation and methods. The Vice-Chancellors of East Anglia and Lancaster are chairmen of the sub-committees of the Vice-Chancellors on the organisation of the university year and on the utilization of teaching space. The retiring Vice-Chancellor of Sussex was, and the Vice-Chancellor of Kent is the Chairman of the Universities' Central Council on Admissions, which was set up in 1961 to rationalize and co-ordinate the competitive entrance system.

Perhaps the most widely discussed and imitated innovation in the field of capital provision is the so-called "Lancaster scheme" of financing student residence by means of commercial loans. But in the field of financial provision generally the New Universities, like the old, are dependent primarily on the State, both for capital and recurrent expenditure. Here the initiative is bound to lie with the State, and the universities can react, at best, only by intelligent anticipation. Autonomy, if it still exists, is limited by the knowledge that those universities which do what the UGC recommends will get the necessary funds, and those which do not must take the consequence of financial sacrifice. The New Universities have undoubtedly been specially favoured in the priority given to their capital needs – though they have also suffered from some unimaginative and perhaps unintentional cuts, which affect a university whose current building programme represents as much or more capital than the buildings in use more than one whose programme is only a small fraction of its capital stock. But the New Universities have also been more closely circumscribed in what they have been allowed to do. They have been "guided" by the UGC to concentrate their efforts principally on the arts, social studies and pure sciences, whereas some of them feel that they have much to contribute to technology. (It is ironical that some of the technological universities, whose existence is the chief reason for this particular policy, should be pushing in the opposite direction, towards provision in social studies and the arts). The most recent increase in State control has come with the achievement on 1 January 1968 of the long-standing ambition of the House of Commons to subject the accounts of the universities to the inspection and comment of its Select Committee on Public Accounts through its servant the Comptroller and Auditor-General. The significance of this is not so much the public audit, which the universities do not fear, as the appointment of a Civil Service Accounting Officer in the shape of the Permanent Secretary to the Department of Education and Science, who is answerable to the Comptroller and Auditor-General and will therefore have the right to demand, on behalf of his Department, prior access to and presumably a measure of control over the accounts and expenditure of individual universities. This important question will be raised again in the appropriate section (Part II, Chapter XI). Meanwhile, it speaks much for the New Universities that their Vice-Chancellors have on the whole welcomed public accountability as an opportunity for placing their stewardship, and their needs and deserts, before the eyes of Parliament, Government and the public.

So much for the common characteristics of the New Universities and their main areas of innovation. Their relations with the State bring us to the larger question of their place in the British system of higher education.

II

THE BRITISH SYSTEM OF HIGHER EDUCATION

British higher education was not until recently a system at all. It was, and in many respects still is, a diverse collection of *ad hoc* institutions brought into existence at different times by different promoters to meet different needs and purposes. The Committee on Higher Education under the chairmanship of Lord Robbins appointed in 1961 "to review the pattern of full-time higher education in Great Britain and in the light of national needs and resources to advise Her Majesty's Government on what principles its long-term development should be based" was the first official body to consider the system as a connected whole.* This was the result of a motion in the House of Lords by Lord Simon of Wythenshawe, whose part in the expansion of the provision for higher education we shall see later.** The Robbins Report of 1963, which did more than anything else to make the Government and the public think of higher education as a single entity, is the best place to start from in describing and criticizing the system. And although the Report came too late to influence the creation of all but two of the New Universities (Stirling and Ulster), the situation it analysed, especially the need for a much faster expansion of student numbers and for a broader education for many university students, was the situation to meet which the New Universities were created.

The Robbins Committee found not one but three separate sectors of higher education with only slight overlapping between them: the universities; the teacher training colleges in England and Wales and the similar colleges of education in Scotland; and the various colleges of technology, commerce, art and the like which were collectively known as colleges of further education. All three sectors were largely State-supported, and all three contained some institutions which were owned and directly controlled by bodies other than the State or the Local Authorities, but it was traditional to distinguish between the university sector, in which all the institutions were technically self-governing corporations, and the other two, in which most of the colleges were owned by the Local Authorities and almost all of them were completely dependent on the State and the Local Authorities for financial support and subject to the inspection and control of the then

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* *Report of the (Robbins) Committee on Higher Education* (HMSO, London, Cmnd. 2154, 1963), pp. 1, 4.

** *Hansard, House of Lords*, 5th Series, Vol. 223, 615–732, 11th May 1960; for his later role see below, Part I, Chapter III.

Ministry of Education, now the Department of Education and Science. Since a famous speech on the subject at Woolwich in 1965 by the then Secretary for Education and Science, Mr. Anthony Crosland, this twofold division has come to be known as "the binary system". One "half" of this system, the universities, he called "the private sector", the other, the teacher training colleges and colleges of further education, "the public sector". We may leave aside his political purpose, which was to single out for favourable treatment the State-controlled colleges as being "directly responsive to social needs", and contrast them with the universities, which presumably were not so. In this chapter we shall first describe the two halves of the binary system, and then offer a critique of the system as a whole.

i) *The Binary System*

The "private" or autonomous half of the binary system consists of the universities, defined as self-governing corporations empowered by royal charter or act of parliament to confer their own degrees and recognized by the University Grants Committee for the receipt of Government grants. The latter criterion has in the twentieth century become more important than the former, since colleges such as St. David's, Lampeter, empowered since 1852 to grant its own degrees, have not been recognized as of university status until admission to the grant list of the UGC, and since almost any college may now grant not its own but the degrees of the Council for National Academic Awards set up on the recommendation of the Robbins Report.

The University Grants Committee is a unique institution, a peculiarly British device by which the Government distributes public money to the universities without, until very recently at least, controlling the way in which they spend it, or interfering with their autonomy.* It grew out of a series of *ad hoc* committees set up from 1889, when the first general grant, of £15,000 per annum, was made to the university colleges of Great Britain. These were replaced by a permanent committee in 1906, when the grant was £133,000, responsible from 1911 to the then Board of Education. The present UGC dates from 1919, when it was constituted as a standing committee of the Treasury to distribute the much enlarged grant, of £692,000 *per annum*, required for the post-war expansion. It was composed exclusively of academics of high standing and wide knowledge of the universities, and its terms of reference were "to enquire into the financial needs of university education in the United Kingdom and to advise the government as to the application of any grants that may be made by parliament towards meeting them". In 1934 it acquired a full-time chairman, and in 1946 (when its area was restricted to Great Britain) its terms of reference were enlarged by the addition of the following: "to collect, examine and make available information on matters relating to university education at home and abroad; and to assist, in consultation with the universities and other bodies concerned, the preparation and execution of such plans for the development of the universities as may from time to time be required in order to ensure that they are fully adequate to national needs". By then the annual grant was running at nearly £7 million, by 1951–52 at nearly £17 million, by 1956–57 at nearly £42 million, by 1961–62 at £74 million, and by 1966–67 at £139 million. In addition, capital grants for buildings, equipment, furniture and the like, which were insignificant before the Second World War, grew from about £4 million a year in 1947–52 to £83 million in 1965–66. This enormous growth in State finance and the consequently increased dependence of the universities on this one source of income — by 1961–62 Treasury grants amounted to over 70% of their recurrent expenditure — meant that the demands for tighter control by the UGC and by the Government were irresistible. The UGC came to exercise "guidance" by means of a system of specialist sub-committees and "ear-marked" (specially appropriated) grants for the development of certain subjects and types of equipment (such as nuclear reactors and computers) and has just recently, in the autumn of 1967, extended this principle of "guidance" (recommendations to develop certain areas of teaching and research rather than others) to the whole quinquennial expenditure of the individual universities. Meanwhile, the Robbins Committee had recommended that the UGC, expanded into a grants commission, should be responsible for the whole of higher education. As a first step government responsibility for the UGC was transferred in 1963 from the Treasury to a new Minister of State for civil science and the universities, who in turn was absorbed into the Department of Education and Science which replaced the Ministry of Education in 1964. Thus the UGC, although still composed largely of part-time academic and industrial members, with a full-time Chairman and a full-time Deputy Chairman, has become, with its much enlarged secretariat and professional and technical officials, almost a department of government in its own right, working in liaison with the Department of Education and Science instead of the Treasury. Moreover, with the opening of the accounts of the universities on 1st January 1968 to the purview of the Comptroller and Auditor-General on behalf of the Parliamentary Committee of Public Accounts, the Permanent Secretary of DES has become the accounting officer responsible for ensuring that the accounts are in order and that any complaints are remedied. This means that the Department itself, and through it the Government, is for the first time involved in the internal accounting procedures of the universities although in no way involved in their internal financial decision making. Whether the universities can therefore continue to be described as the "private" or "autonomous" sector is now a debatable question.

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* For the development of the UGC, see W.H.G. Armytage, *Civic Universities* (1955), pp. 235-6, 273, 284-5; UGC, *University Development, 1957-62* (HMSO, London, Cmnd., 2267, 1964), Chap. viii.

The university sector contained in 1962–63, as reported by the Robbins Committee, 118,400 students out of the 215,900 in full-time higher education, or 55% of the total.* If we add to these the 10,300 students in the ten colleges of advanced technology which have since become universities and most of whom were already doing work of degree standard for the Diploma in Technology, the proportion rises to 59%. Since then the numbers in the universities have risen to 154,700 in 1966–67 but, because of the more rapid rise of the total in higher education to 294,200, the proportion in the universities has declined to 53%.

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* Statistics for 1962–63 from *Robbins Report;* University Statistics for 1966–67 from UGC, *Annual Survey, 1965–66* (HMSO, London, Cmnd. 3192, 1967); further education statistics here and below from Department of Education and Science, *Statistics of Education, 1965* (HMSO, London, 1966), Part II, Section 2, Further Education, and *The Times*, 13 September 1967.

Amongst the universities there are naturally great differences in age, size and, despite British insistence on the equality of degree standards, in prestige and status. The two oldest, Oxford and Cambridge, founded in the twelfth and thirteenth centuries, are the largest integrated universities, with 17,900 students in 1962–63, and 20,440 in 1966–67, and few would deny their pre-eminence amongst English universities, or at least their greater relative attraction for students, which the Robbins Committee thought should be reduced.* They are collegiate institutions for social, residential and tutorial purposes, but most of the lecturing and all the formal examining are organised centrally by the University in each case.

Next in age come the four ancient Scottish universities of St. Andrews, Glasgow, Aberdeen and Edinburgh, founded in the fifteenth and sixteenth centuries. Together with the University of Dundee and the University of Strathclyde, originally connected with St. Andrews and Glasgow respectively and segregated from them in 1964, they contained in 1962–63, 20,200 full-time students, and in 1966–67, together with the ex-central institution (Scottish equivalent of a college of advanced technology), Heriot-Watt University, 29,134. Apart from the collegiate university of St. Andrews, they are all non-collegiate, civic universities with strong professorial departments, and indeed the model on which the English civic universities of the nineteenth century were based. They all share a common Scottish national tradition of education somewhat different from the English, in which the main elements are an earlier age of entry (at 17 rather than 18 years), a broader educational pattern starting with a common course in the major faculties leading to the three-year pass degree, and a longer course of four years' duration for those transferred to honours, both courses conferring the M.A. degree. For reasons connected with the earlier age of entry, which is based on the Scottish school-leaving certificate taken a year earlier than the Advanced level of the English General Certificate of Education, and also connected with Scottish patriotism and pride in their broader and longer university education, they draw most of their students from Scotland, and form an almost separate university system.

The University of London, founded largely by Scottish graduates including Henry Brougham and James Mill as a private venture in 1826 and chartered in 1836, is technically the largest university, with 23,100 students in 1962–63 and 29,590 in 1966–67. Apart, however, from its large and famous post-graduate institutes and medical schools, it is mainly an examining body, and its teaching function devolves upon its now thirty-four self-governing schools, several of which, such as the original University College, the Imperial College of Science and Technology, and the London School of Economics and Political Science, are as large as many civic universities. Only about a fifth of the students live in the hostels or halls of residence attached to the schools, and most live in lodgings or at home. Ranking third, after Oxford and Cambridge, amongst English universities in status, London University has yet played a far larger role in the development of British and also Commonwealth higher education, both as a model in its strongly professorial and departmental structure, and more directly as sponsor and guarantor of new university colleges and as a refuge for a large body of aspiring part-time degree students who could find no other home. It exercised the powers under its various charters, of affiliating to itself any college in Britain, or, more recently, in the Commonwealth, which would prepare students for its external degree examinations, and of examining any qualified student anywhere in the world who enrolled for its external degrees. In addition to its internal students, some 26,688 students in 1962–63, and 29,170 in 1964–65, were working either in affiliated or unaffiliated colleges or at home for its external degrees and diplomas. Perhaps current developments will tend to reduce these numbers. The tendency since the founding of Keele in 1949 has been to create new universities rather than affiliate them as colleges to London, and to liberate by 1957 all the existing affiliated university colleges in Britain (though not yet all those in the Commonwealth, especially those set up or affiliated in Africa since the War). Those unaffiliated technical colleges and the like which used to prepare students for the London external degree now have the opportunity in approved cases of shaping their own courses and examinations for the degrees of the Council for National Academic Awards set up on the recommendation of the Robbins Report. And the external students unattached to any college will shortly have the opportunity of taking the degree courses of the Open University, originally designated as the University of the Air, which is currently being launched by an Academic Planning Board under the chairmanship of Sir Peter Venables, Vice-Chancellor of the University of Aston in Birmingham, to cater for them by means of radio and television broadcasts, correspondence tutorial courses, and the like. But London's invaluable contribution in this field has survived for over a hundred years, and may well continue.

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* *Robbins Report*, pp. 78–82, 277.

The English civic universities come next in age, size and prestige. They are nearly all non-collegiate universities built in important provincial cities, mostly large and industrial, and nearly all of them owe their origins to the civic pride of their citizens, especially rich business and professional men of the Victorian age and early twentieth century. The chief exception is Durham University, founded by the Church (strictly by the rich Dean and Chapter of Durham cathedral) in 1832, and a collegiate university which until recently was very small, with 1,768 students in 1962–63 and 2,809 in 1966–67. Durham apart, the older group – Manchester (1880), Liverpool (1884), Leeds (1889), Birmingham (1900), Sheffield (1905) and Bristol (1909) – all grew out of Victorian colleges which rose by stages to university status, the first, Owens College, Manchester, being founded in 1851. They are all large by British standards, ranging from Sheffield, with 3,625 in 1962–63 and 5,109 in 1966–67, to Manchester (including its faculty of technology, the separately financed University of Manchester Institute of Science and Technology), with 7,787 and 9,771. The younger group of English civic universities – Reading (1926), Nottingham (1948), Southhampton (1952), Hull (1954), Exeter (1955), and Leicester (1957) – were all small university colleges affiliated to London University and working for its external degrees, and, with the exception of Reading, reached full, independent university status only after the Second World War. All except Nottingham, with 2,813, had fewer than 2,000 students in 1962–63, though they have since grown to between 2,500 and 3,500. To these younger civics we should add Newcastle-upon-Tyne, separated from Durham University in 1963, then with 4,145 students, and 5,056 in 1966–67. Together the fourteen civic universities contained in 1962–63, 48,177 students, and 66,505 in 1966–67.

By age and perhaps status the federal University of Wales, chartered in 1893, belongs to the same category as the older English civic universities. Its four constituent colleges, at Aberystwyth, Cardiff, Bangor and Swansea, together with the Welsh National School of Medicine, also at Cardiff, have the same origins in civic or perhaps regional pride, tinged in this case with Welsh national feeling. In 1961 St. David's College, Lampeter, a Church foundation rather similar in origin to Durham, was, as mentioned above, brought as an independent university college into a special relationship with the University College at Cardiff as sponsor but, anomalously, not into the University of Wales. In 1962–63 the six colleges contained 7,761 students, and in 1966–67, 10,744.

We should add, for completeness, the Northern Irish universities excluded from both the Robbins Report and the grant list of the UGC, since they receive their funds direct from the Government of Northern Ireland at Stormont, and reviewed by the Lockwood Committee on Higher Education in Northern Ireland in 1963–65.* The Queen's University, Belfast, we have already noticed as one of the Queen's Colleges of 1845, which was raised to separate university status in 1908. It had 4,135 full-time students in 1963–64. Magee University College is a very small institution founded by the Presbyterian church in 1865, associated with the Royal University of Ireland from 1879 to 1908, and with Trinity College, Dublin, since 1909, and given limited recognition by Queen's University, Belfast, in 1951. It was never allowed to confer its own degrees, and could prepare students in only the early stages of degrees which had to be completed at Trinity College or Queen's University. In 1963–64 it had 245 students. It is now in process of being amalgamated with the New University of Ulster at Coleraine, as we shall see below.

Finally, we come to the new universities of the 1960's, which appear in the Robbins Report as the ten colleges of advanced technology, with 10,300 students, and the seven New Universities in England, only one of which, Sussex with 450 students, had opened its doors. The Robbins Committee recommended that at least three Scottish central institutions should also be raised to university status, only one of which, Herio-Watt University, with 1,124 students in 1966–67, has been so. It also recommended that six more New Universities should be founded, including at least one in Scotland. Only the last, Stirling University, has so far been created, and no more have been designated or are likely to be in the near future. The ex-CAT's, or technological universities (excluding Heriot-Watt), contained in 1966–67 about 18,000 students, including about 1,000 at Chelsea College which had become part of London University and who are included above in its figure. These have now shed practically all their part-time and non-university course students to the non-university colleges of further education.

The eight New Universities in England, including Keele, contained 10,665 students in 1966–67. (Stirling and Ulster were not yet open). This figure was less than 6% of the total for Great Britain, and not therefore a very significant contribution to student numbers; but they were still growing rapidly, and only Sussex was approaching the minimum target figure of 3,000. The rest ranged between 755 at Essex and 1,391 at Keele. When all ten reach the target, they will be bigger than all but a dozen of the universities on which the Robbins Committee reported, and than all but nineteen of the forty-three in Great Britain in 1966–67. Of course, by then many other universities will have reached this size, but the fact remains that the New Universities have been planned, unlike any of their predecessors, to leap within a decade to a size considered large, or at least bigger than the median university, at the time they were created. Whether they will take their place alongside the average in status or prestige it is still too early to say, although the signs are that they are attracting students and staff as easily as most, and more easily than some of the smaller of the civic universities. But in so far as status and prestige are a function of the size and consequent breadth of studies covered by the faculty, and of the modernity and convenience of the buildings and equipment, not to mention the stimulus and excitement of new and experimental curricula, the New Universities can hope to achieve a ranking at least commensurate with their size. In marked contrast with most of their predecessors, therefore, which had to serve a long apprenticeship as small and subordinate university colleges, the New Universities are being allowed and encouraged – somewhat unfairly perhaps in the eyes of their rivals – to claim an immediate place in the sun.

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* *Report of the (Lockwood) Committee on Higher Education in Northern Ireland* (HMSO, Belfast, Cmnd. 475, 1965), from which the Northern Irish statistics here and below are taken.

The other "half" of the binary system reviewed by the Robbins Committee consisted of the 146 English and Welsh teacher training colleges and the seven Scottish colleges of education, with 54,700 full-time students in 1962–63, and more than 300 colleges of further education of various kinds in England and Wales and fifteen central institutions in Scotland (excluding the colleges of technology), which contained some 33,500 full-time students on advanced courses. Altogether this "public" sector accounted for 88,200 advanced full-time students, or 41 % of the total in higher education. Since then, as we have seen, the number has risen to 139,500 in 1966–67, or 47 % of the total, and is indeed approaching half of the system. To these figures, however, we should add the very large numbers of part-time students taking advanced courses of exactly the same kind in these and other (mainly part-time) colleges and evening institutes of further education. In 1962–63 nearly 72,000 part-time students were taking advanced courses leading to a recognized qualification, raising the total number of degree and other advanced students in higher education to 287,400 and the proportion in the "public" sector to over 55 %. Since then the number of part-time advanced students has risen to over 100,000, and the proportion of advanced students in the "public" sector to nearly three-fifths. This is a measure of the large part played in British higher education and the supply of qualified manpower by institutions of less than university status, and within that sector by students gaining their qualifications while engaged in full-time income-earning work.

Technical education in Britain has traditionally been in large measure part-time education, both at the ordinary and at the advanced level. The British Industrial Revolution of the eighteenth and early nineteenth centuries was largely the work of self-educated inventors, craftsmen, mechanics and artisans whose sole training, if any, often consisted of an apprenticeship to another skilled worker. Some attempt was made by the Literary and Philosophical Societies of provincial towns such as Manchester and

Birmingham in the late eighteenth century to interest artisans in lectures in applied science, and from the 1820's the Mechanics' Institutes in many industrial towns provided libraries and evening lectures for skilled workers.* Some of these Mechanics' Institutes, like that in Manchester which was the direct lineal ancestor of the present University of Manchester Institute of Science and Technology, went on to become important technical colleges, first for part-time students and then for full-time ones as well. Most, however, decayed into social and cultural clubs for non-manual, lower middle-class workers.** The first substantial State aid to technical education came as a result of the Great Exhibition of 1851, the profits of which, together with a government grant, were devoted to the establishment of schools of art and science at South Kensington in London. From 1857 the government grant was distributed through the Department of Science and Art, which supported a growing number of courses in schools and colleges throughout the country. Much of this development was due to the increasing concern over foreign industrial competition, especially from Germany with its progressive system of public elementary and advanced technical education. This led further to the Technical Instruction Act of 1889 by which the new County and County Borough Councils were empowered to levy a rate for evening classes in technical education; this gave considerable encouragement to the contemporary movement to found "polytechnics", or multi-disciplinary technical colleges, and further support came from the so-called "whiskey money" diverted in 1890 by temperance interests in Parliament from the fund intended for compensating publicans for the loss of their discontinued licences. In 1902 the County and County Borough Councils became responsible for all local public education, including of course technical education, and have remained so ever since.

Down to the First World War most technical and other further education was part-time, but since then a growing proportion has become full-time. Both part-time and full-time students work for a wide variety of qualifications, both non-advanced and advanced, in an enormous range of subjects. The advanced qualifications, chiefly the Higher National Certificate, the Higher National Diploma, and various Art Diplomas and Certificates, are often considered to be equivalent to all or part of an ordinary or pass-level degree, while increasing numbers of students take actual degree courses, either for the London external or for the degrees of the Council for National Academic Awards. In 1962–63 the 300-odd colleges with full-time students (as well as part-timers) reviewed by the Robbins Committee were only the tip of the iceberg. Altogether there were over 8,000 State-aided establishments in Great Britain, with 2.6 million students. Most of the establishments, however, were evening institutes, most of the students were part-time, and many of them – some 787,000, both part-time and full-time – were under 18 years old and so properly belonged to secondary rather than higher education. Only 138,000, part-time and full-time, were taking advanced courses leading to recognized qualifications, and of these only 38,300 were full-time (including students on temporary full-time release from their employment to take "sandwich" courses). Thus the 33,500 full-time students in the colleges of further education reviewed by the

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* N.A. Hans, *New Trends in 18th Century Education* (1951), pp. 158–60. A.E. Musson and E. Robinson, 'Science and Industry in the 18th Century', *Economic History Review*, 1960, XIII, pp. 222–44.

** J.W. Hudson, *History of Adult Education* (1851), p.vii.

Robbins Committee were only a small fraction of the "public" sector. Since then the total number of advanced students has grown to 150,000 in 1965–66, of which the full-time students were about 47,000. To these we should add the full-time students over 18 years old enrolled in further education in Northern Ireland, who numbered about 1,500 in half a dozen colleges in 1963–64.

The other part of the "public" sector is that devoted to the training of teachers. In Scotland all teachers must be trained, and both graduates and non-graduates are trained in the colleges of education. In England and Wales training for graduates is not yet compulsory, though scheduled to be so on some future date as yet unspecified, and all but a small number of the majority of graduate teachers who take training do so in the Education Departments of the Universities. The non-graduates are trained in the teacher training colleges which have, on the recommendation of the Robbins Committee, become colleges of education. Only one per cent of the students in the training colleges were graduates taking the one-year postgraduate course. Seven hundred students in four colleges were taking a four-year course leading to both a professional certificate and an external degree of London University. The rest were on three-year courses leading to the teaching certificate. Ninety-eight out of the 146 training colleges belonged to the Local Education Authorities (County and County Borough Councils), the remaining 48 to independent bodies mostly connected with the various churches. Teacher training in England, indeed, stems from the so-called "normal schools" set up in the nineteenth century to supply teachers for the voluntary (church and other denominational) bodies responsible until 1870 for most public elementary education, and for a large part of it thereafter. The State's interest is largely twentieth-century, but can be said to date from the "normal school" which the first Secretary to the Privy Council Committee on Education, Dr. J.P. Kay (later Sir James Kay-Shuttleworth), set up as a private venture in his own home at Battersea in 1839, or at least from its successor at Twickenham from 1846 to 1855 which trained teachers for the Poor Law schools.* All the colleges were attached after the Second World War to the Institutes of Education of their nearby universities for academic and examining, but not financial, purposes.

In Scotland the colleges of education are all independent institutions administered by governing bodies representing the churches involved, the Local Authorities, universities, teachers and the Secretary of State for Scotland, and financed jointly by the State and the Local Authorities. Apart from the university representatives on the governing bodies there is no formal link with university Education Departments. In Northern Ireland there are six institutions for non-graduate teacher training, shared as in England between the churches and the State and Local Authorities, with 2,050 students in 1963–64.

One of the most important features of the "public" sector, taken as a whole, has been its role as a source of new university institutions. Most of the modern universities, as we have seen, began as non-university colleges preparing students for external London degrees or lesser qualifications. The Robbins Committee envisaged and encouraged the perpetuation of this upward mobility, in two different ways. The teacher training colleges of

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* A.M. Ross, 'Kay-Shuttleworth and the Training of Teachers for Pauper Schools', *British Journal of Educational Studies*, 1967, pp. 275–83.

England and Wales, renamed as colleges of education, were to be absorbed into the university system as constituent colleges of university Institutes or Schools of Education, to be financed through the universities, and to prepare their abler students over a four-year course for both the professional qualification and the new Bachelor of Education degree of the university. (In Scotland the colleges of education were to draw closer to the universities, and also to offer a four-year degree course, but to be separately financed by the grants commission). In the further education area, in addition to the raising of the CATs to university status, "the Regional Colleges are to be regarded as ... providing the seedbed for some further growth of institutions to university status." Meanwhile, "students taking advanced courses in the Regional and Area Colleges should have the same opportunity for degrees as those in university institutions", through the newly created Council for National Academic Awards, which would approve degree courses in particular departments.*

Only part of these recommendations has been carried out. Owing to the opposition of the Local Authorities to loss of control over their colleges of education, the latter have remained financially independent of the universities, though attached to them for academic purposes, including the B.Ed. degree. The Council for National Academic Awards has been set up and has begun to approve degree courses, but as for raising further colleges to university status, the speech of the Secretary of State for Education and Science at Woolwich in 1965 gave clear warning that his Department did not intend to relinquish control of any more institutions to the "private" sector, but would instead develop the "public" sector on terms of equality with the universities. This policy has been confirmed by the declared intention of designating some thirty colleges as Polytechnics, with special emphasis on their range of degree work under the CNAA. To many, and not only in the universities, this is seen not merely as a retaliation by the Department of Education and Science and the Local Education Authorities for the loss of the CATS, but as an attempt to build up a rival and cheaper system of degree-level education, directly under the control of the State. Whether in fact it will be cheaper will depend on whether the Polytechnics will be able to attract enough staff of adequate quality without bringing their staff-student ratios, and therefore the staff's time for research, as well as their research (especially library and laboratory) facilities, in line with those of the universities. With salaries already higher over most of the range than in the universities, and the Association of Teachers in Technical Institutions demanding more time for research, their ability to provide degrees more cheaply than in the universities remains to be seen.

Despite the attempt by the Department of Education and Science to keep the two halves apart, it is clear that the binary system is daily becoming a single entity. On the one side the universities are becoming more dependent on State finance and more subject to State "guidance" and accountability, if not to complete State control. On the other, the colleges of education in England and Wales are already for all academic purposes part of the university system, and those in Scotland are drawing closer to the universities, while in the further education sector the tendency is to transfer more and more of the advanced work into degree courses. Given the strong motivation of the teachers of these courses, as well as of the

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* *Robbins Report*, p. 271.

CNAA, to make them the equivalent of university degrees, and given the impossibility of doing this without adequate time for the teachers to read and research at least to the extent of keeping abreast with the state of university knowledge in their subjects, it is highly probable, if not inevitable, that the Polytechnics will approximate more closely to universities in their standards and methods of work, and begin, like all previous aspirants, to demand full university status. Even before that happens, however, it is to be hoped that the British system of higher education will become more accessible to all those aspiring to enter it, for, as we shall see in the next section, all its faults stem from its inability to cope with the pressure from below.

ii) *A Critique of the System*

The British system of higher education, as reviewed by the Robbins Committee, can be summarized as élitist, hierarchical, intensely competitive, too narrowly specialized and inadequate in size to meet the demands upon it.

In the first place, it catered for a comparatively small élite. In 1962 only 8.5 % of the relevant age group entered full-time higher education. Of these, 4 % entered universities, 2.5 % went into teacher training, and 2 % into full-time further education of all other kinds. The proportion of women was even smaller, at 7.3 %, with 2.5 % entering universities, 3.8 % teacher training, and 1 % full-time further education; though this meant that the proportion of men was somewhat higher than the average, at 9.8 %, with 5.6 % entering universities, 1.3 % teacher training, and 2.9 % full-time further education.* These proportions were amongst the lowest for advanced countries. In 1958–59 the percentages of the relevant age group entering full-time higher education and, within that figure, entering courses of British degree level (in brackets), were as follows: Great Britain 7.7 (4.5), France 9 (7), West Germany 7 (4), Netherlands 6 (3), Sweden 12 (10), USA 30 (20, Junior Year), and USSR 5 (5).**

This unflattering picture is modified in Britain's favour, however, by three other factors: the much larger numbers of part-time students here than elsewhere; the much lower level of "wastage" (failure to complete courses for academic or other reasons), at least in full-time higher education; and the greater equality of opportunity, in the sense that the élite contains a higher proportion of working-class students than elsewhere in Western Europe. If we include part-time students the percentages entering higher education and courses of British degree level (in brackets) in 1958–59 become: Great Britain 12.5 (6.9), France 9 (7), West Germany 7 (5) Netherlands 7 (4), Sweden 13 (11), USA 35 (22, Junior Year), and USSR 10 (10).*** Because a much larger proportion of those entering full-time courses in Britain complete them, the percentages completing full-time courses three years later, in 1961–62, become still more favourable: Great Britain 9.8 (5.6), France 5 (3), West Germany 4 (3), Netherlands 4 (2), Sweden 7 (6), USA 17 (percentage completing courses of British degree level not available), and USSR 7 (7).* The output of qualified manpower in Britain was thus greater than in any other European country listed, and inferior only to that of the USA. Finally, because of the automatic availability of grants covering fees and maintenance in Britain to students of inadequate means, higher education is more accessible to working-class children here than in any other Western European country. At a Conference of European Ministers of Education called by UNESCO in Vienna in November 1967 it was shown that 25% of male university students in Britain around 1960 were from manual working-class families (a figure which rises to 35% for higher education as a whole), compared with 5% in France and West Germany, 6 in the Netherlands, 11 in Belgium, 13 in Italy, 14 in Sweden, and 20 in Norway. Only in Eastern Europe was the British percentage surpassed, by Poland, Rumania and Czechoslovakia with 30–40%, and Yugoslavia with 56%.** In other words, British higher education caters for an élite, though no more so in terms of the numbers graduating or otherwise qualifying than in most comparable countries, but the élite is to a greater extent than elsewhere in Western Europe selected by merit.

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* *Robbins Report*, p. 16.

** *Ibid.*, p. 42.

*** *Ibid., loc. cit.*,

The system, secondly, was, and is, hierarchical, not only as between the university and the other two sectors of higher education, but as between the institutions within each sector, which rank unequally in status, prestige and in attractiveness to students. In general we can say that if the higher education system takes only the cream of the young people in the relevant age group (not necessarily in the sense of the best, but only in the sense of those who rise by whatever means to the top of the educational bowl), then the universities take *la crême de la crême,* and a few universities *la crême de la crême de la crême,* while amongst non-university colleges some have ampler facilities and provide more courses of higher grade. But whereas the ranking of non-university colleges is largely formal, the differences between National, Regional, Area and Local Colleges being determined by Government policy and finance, the ranking of universities is largely informal, and determined by age, tradition, comparative wealth from private endowments, success in obtaining public and private grants and facilities for libraries, research, student residence and the like, the intellectual, cultural and social amenities of the local environment, and any other factors which affect their attractiveness for staff and students. In theory all first degrees, apart from the difference between honours and ordinary or pass degress, are equal in standard. In practice, as measured by the ease with which graduates of different universities obtain employment, they are very unequal. There is some difference of ranking between universities according to subject, with particular universities being famous for particular sciences and technologies for example, but in general it can be said that Oxford and Cambridge graduates in the arts and social sciences obtain posts in all the universities, in the civil service and in many kinds of business more easily than do others, with London graduates next, followed by graduates of the larger and smaller civic universities roughly in order of institutional size (although, of course, the level and class of the degree will also affect the order of employers' preferences). The attractiveness of Oxford and Cambridge for students rests partly on this vocational advantage, but is reinforced by the greater comfort and amenities of life there, which in turn depend on the endowments of the colleges, the higher level of fees charged (and allowed by the Department of Education and Science in the permitted level of student grants), and on certain fortuitous advantages, such as the attractions of the two towns, and the privileges of their copyright libraries, which by act of parliament receive a free copy of every book published in the country. To reduce the relative attractiveness of Oxford and Cambridge the Robbins Report recommended that other universities should be made more attractive, by means of specially generous capital grants to raise their standards of comfort and amenity, especially of student residence.* At bottom, however, the attractiveness of universities depends chiefly on academic reputation, and students seek increasingly to go to those universities which in their chosen subjects promise the greatest intellectual stimulus and the best prospects for post-university careers. This in turn depends on the comparative reputation of their academic staffs, the number of highly qualified specialists in the different subjects, the size and quality of the post-graduate schools, the extent of the library book stocks, the scale and quality of the equipment of the laboratories, and so on. In all of these there is a premium on size, which tends to reinforce the lead of Oxford, Cambridge, the larger London colleges, and the larger civic universities.

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* *Ibid.*, p. 44.

** *Conference of Ministers of Education of European Member States on Access to Higher Education, Vienna, 20–25 November 1967* (UNESCO, Paris, 1967), vol. IV, Table vi; the Report warns, p. 21, "that a comparison on an international scale is not feasible", but that "the only social categories which could at a pinch be compared are those of farmers and workers". It does in fact give a comparison in Table vi as stated, of the percentage of manual workers' sons in the student body, and the divergences are so great as to override minor differences of definition, and to support the general conclusion in the text above.

Curiously enough, although the Robbins Committee was concerned to reduce the relative attractiveness of Oxford and Cambridge, it was strongly in favour of certain kinds of inequality between institutions of higher education, and indeed set out to increase them. Leaving aside the inequality between the universities and the rest which its whole philosophy of "upward mobility" from the latter to the former underlined, it selected certain university institutions for specially favourable treatment with the deliberate intention of raising their attractiveness for staff and students, especially post-graduate students, above the rest. These were the notorious five "SISTERs" (Special Institutions for Scientific and Technological Education and Research), which were to be given special capital grants and expanded to 3,500–4,500 students, of whom half were to be post-graduate. They were to include the Imperial College of Science and Technology in London (whose Principal, the late Sir Patrick Linstead, was a member of the Robbins Committee and is commonly credited with the authorship of this proposal), the Colleges of Science and Technology at Glasgow and Manchester (now the University of Strathclyde and the University of Manchester Institute of Science and Technology), one selected from amongst the ex-Colleges of Advanced Technology, and one completely new foundation, which public discussion at the time assumed would be in the north-east.** The proposal was strongly opposed by most other universities and by the Association of University Teachers, on the grounds that centres of excellence are not made but emerge by their own competitive merit, and that every university should be able to compete to become a centre of excellence in whatever discipline its staff could earn the right and reputation. In the outcome, no SISTERs were designated, but Imperial College had already been earmarked for rapid expansion in research and post-graduate studies, and was joined in this favourable position by Strathclyde and the Manchester Institute. Meanwhile, the policy of the University Grants Committee is moving towards the encouragement of certain developments, such as Oriental, East European or Latin-American studies, high energy nuclear physics or radio astronomy, or even experiments with closed-circuit television or large-scale audio-visual aids, exclusively in a few universities. But such special developments are widely scattered amongst the universities, any one of which can put forward a case for special support of a particular project, and on the whole the position remains that the inequalities between British universities rest on informal factors, notably past and present achievement in teaching and research, rather than on deliberate central policy.

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* *Robbins Report*, pp. 79, 277.

** *Robbins Report*, pp. 128–30, 281.

The position is markedly different in the non-university sector where, especially in further education, the Department of Education and Science arranges the colleges in a hierarchy of differential status, responsibilities and scale of finance. In England and Wales in 1962–63, apart from the ten colleges of advanced technology, there were six (now seven) National Colleges, and a number of quasi-national ones receiving grants direct from the Ministry rather than the Local Education Authority, 25 Regional Colleges, about 160 Area Colleges, and several hundred Local Colleges. In all of these advanced courses could be taken, but scales of staffing, accommodation and equipment meant that the higher the status the larger the proportions of advanced and full-time work. The National Colleges were not necessarily more advanced than the rest, but were highly specialized institutions concentrating on the study of technologies for which the national demand was comparatively small, such as food technology, rubber technology, or foundry engineering. In 1962–63 they had 750 advanced full-time students. To these we should add a small number of other nationally renowned colleges, including the Royal College of Art, Kensington and the College of Aeronautics, Cranfield, each with 550–600 advanced full-time students. In the Regional Colleges, two-thirds, 9,900, of the full-time students were doing advanced courses, as were a quarter, 23,000, of the part-time students. In the Area Colleges only a minority of the students were taking advanced courses, but these came to a larger total than in the Regional Colleges: 9,000 full-time and 63,000 part-time students. In the Local Colleges most of the work was at the non-advanced level, but there were still 4,000 students, all part-time, taking advanced courses. In addition there were 165 Art Schools (some of them attached to the above colleges), in which 8,000 full-time and 2,000 part-time students were taking advanced courses. There were also five Agricultural Colleges capable of, but not yet doing, advanced work, and 40 Farm Institutes. Below all these in the hierarchy came nearly 7,500 Evening Institutes, all necessarily for part-time students, with few or none of them advanced. Similarly in Scotland, most of the advanced work was done in the 15 Central Institutions, with about 5,000 full-time and 4,000 part-time advanced students, while most of the non-advanced work was done in the Further Education Centres, with only about 3,000 advanced students, all part-time.[*]

This formal hierarchy of further education colleges, in which the inequalities of academic level, staffing and financial provision were the result of deliberate policy, was nonetheless capable of some flexibility. Local Colleges could aspire, if they could show the demand for advanced work and their ability to meet it, to be Area Colleges, Area Colleges to be Regional Colleges, Regional Colleges at that time to be Colleges of Advanced Technology, and the last to be universities. The Robbins Committee recommended that this process should continue. The Colleges of Advanced Technology should become technological universities, and at a lower level the advanced full-time work should be concentrated in those Area Colleges likely to become Regional Colleges.[*] Since then the former have of course become universities, and amongst the latter most of the Regional Colleges have been designated as Polytechnics, and scheduled for rapid development, especially in courses of university standard leading to the degrees of the Council for National Academic Awards. Although this stems from the policy of raising the "public" sector to equality with the "private", it nevertheless confirms the hierarchical nature of both halves of the binary system.

Because it was both élitist and hierarchical the system, thirdly, was intensely competitive, the more so the higher up the hierarchy one went. It did not, and does not, pretend to accommodate all candidates with minimum entrance qualifications, and, indeed, most teachers in both the universities and the other colleges consider the entrance qualifications unrealistic. Although many, if not most, universities are willing to consider applicants, especially so-called "mature students" (over 23 years of age), without such qualifications, the generally accepted minimum entrance qualification for universities in England and Wales — accepted as the basis for the statistical estimates of the Robbins Committee and as the limit of its responsibilities by the Universities Central Council on Admissions — is a pass in two subjects at the Advanced level in the General Certificate of Education (awarded by one of seven different university examining boards), taken at 18, and commonly referred to as two A-levels. In Scotland the minimum entrance qualification for universities in 1961 was a pass in three subjects at the Higher grade and in two at the Lower grade in the Scottish Leaving Certificate, all taken at 17. (In 1962 this was replaced by the Scottish Certificate of Education, with the same number of passes, but with the Lower and Higher grades taken at 16 and 17 respectively). In 1961, 6.9% of the age group (8.7% of the boys and 5.1% of the girls) in Scotland, were so qualified. But in the event less than two out of every three qualified, 4.1% of the age group in Great Britain, were admitted to the universities. Rather more of the boys, about four out of five of those qualified, or 5.6% of the age group, were admitted, and many fewer of the girls, less than half of those qualified, or 2.5% of the age group, although more of the girls went to teacher training colleges. In fact most of the successful applicants had qualifications far above the minimum: in England and Wales over four out of five had at least three A-levels, and about half of them had at least two at grade C (60%, or two grades above the pass mark).

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[*] *Robbins Report*, pp. 29–34, 137–46; *Statistics of Education, 1965*, Part II, Section 2, Further Education.

[**] *Robbins Report*, p. 281.

Similarly in the non-university sector, most of the full-time students had qualifications well above the minimum. The minimum entrance qualification for the teacher training colleges in England and Wales was a pass in five subjects at the Ordinary level of the GCE, and in 1961, 16.4% of the age group (16.9% of the boys and 15.8% of the girls) were so qualified. In Scotland, where the qualification for teacher training was higher (two Higher grades and three Lower grades in the Leaving Certificate), the proportions were lower: 8.7% of the age group (9.0% of the boys and 7.3% of the girls). From these we must deduct those who were admitted to universities, but only a very small fraction of the rest went into teacher training — 2.5% of the age group in Great Britain (1.3% of the boys and 3.8% of the girls) — and these were mostly highly qualified: in England and Wales 38% had two or more A-levels, and (leaving aside the 8% admitted on other qualifications) only 31% relied on 0-level passes alone. Of course, many of those qualified did not wish to train as teachers, and went into further education colleges, but there too the competition was severe. In the Colleges of Advanced Technology 61% of the full-time students had two or more A-levels, 75% one or more, and nearly all the rest one of the alternative technological qualifications, the Ordinary National Certificate or Diploma. In the other colleges of further education 28% of the full-time students had two or more A-levels, 50% one or more, 37% the ONC or OND, and only 13% had neither A-level nor ONC or OND.*

All this meant that there was, and is, an intense scramble for places, especially in the universities. The extent of the competition became clear when the admissions system was centralized under the Universities Central Council for Admissions in 1961. In its "clearing-up" operations at the end of the process of selection when it tries to direct qualified but unsuccessful applicants to unfilled places in other universities, it has been forced to adopt a standard well above the minimum qualification. Commenting on the clearing-up process in faculties other than technology in 1963, its first report says:

> Since it was feared that there might be as many as 20,000 disappointed applicants, only a limited number of whom could be re-considered in September, the Central Council prescribed a standard below which it could not guarantee to consider a candidate who applied for clearinging up. This standard was fixed at a minimum of Grade C in two subjects at the Advanced level in the examination for the General Certificate of Education. This seemed a reasonable estimate of the lowest level at which, in the competitive conditions known to exist in these faculties, candidates would have any hope of acceptance for the last remaining places.

It is true that of the 10,000 clearing application forms sent out only 2,800 were returned, and that all but about a thousand of these were placed in universities. It is also true that over a thousand places were still vacant in the universities when the session began, though most of the vacancies were in science and technology and most of the disappointed applicants in arts and social studies. A follow-up survey of disappointed applicants also showed that most of them (60 % of the boys and 65 % of the girls) either returned to school to try again the following year, or found places in other colleges of higher education, while a further group (14 % of the boys and 8.6 % of the girls) went into full-time employment offering the opportunity for part-time further education.* Nevertheless, just as even a small percentage of unemployment intensifies the competition for jobs, so the shortfall of university places, although not large in measurable terms, intensified the competition for them and discouraged large numbers of applicants who might otherwise have applied, especially for clearing-up places.

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* *Robbins Report*, pp. 16, 17, 26, 76 and *Appendix One*, pp. 16–17.

Moreover, the competition was, and is, far more severe in arts and social studies (and, within these, in certain subjects, such as English, history and economics) than in science and technology. And with the increase in the birth rate after the Second World War and again in the late 1950's and early 1960's, plus the so-called "trend" for larger numbers of children to stay on at school and qualify for university entrance (discussed at more length in the next section, Part I, Chapter III), it was bound to become still more severe. The Robbins Report spoke of an "imminent crisis" which "has cast a sombre shadow on our deliberations", and warned that unless immediate measures were taken to expand provision beyond the 40 % increase already planned for the whole of higher education, there would be a shortfall of 25,000 places, all in the university sector, by 1967–68.**

The system, fourthly, was characterized, beyond that of most other countries, by too early and too narrow specialization. This was in part due to the increasing competition for places, which, especially in England and Wales, forced schools and their pupils to concentrate from the age of 16 on the two, or more commonly three, A-level subjects required for university entrance. (In Scotland where both the Leaving Certificate, now Certificate of Education, and first-year university courses comprise a large number of subjects the problem is less acute). The problem was aggravated by the fact that very few of the pupils studied subjects on both sides of the arts-science divide. Only 6 % of the school leavers in 1961 with two or more A-level passes were qualified in both science (including mathematics) and arts subjects. Indeed, specialization began even earlier than 16, since 40 % of those reading arts subjects at the university had taken no science at the Ordinary level of the GCE, and over one-third of the science students had taken neither history nor geography.***

Not surprisingly, specialization continued and narrowed still further in higher education. Leaving aside the mainly vocational courses taken at the teacher training and further education colleges, where the range of subjects was narrowly geared to the future career of the student, this can best be illustrated from the universities of England and Wales where in 1961–63, 63 % of all first-year students (excluding medical and agricultural students) were taking single main-subject courses (though these might involve one or two supporting subsidiary courses). By their final year in 1963–64, the universities estimated, 77 % would probably be taking such

[*] Universities Central Council on Admissions, *First Report, 1961–3* (1964), pp. 6–7.

[**] *Robbins Report*, pp. 257–60.

[***] *Ibid.*, pp. 76–7.

courses.* (In Scotland where, with a traditionally earlier starting age and a four-year course for the honours degree, the last year of a broader school syllabus was in effect transferred to the first year at the university, the courses covered a wider spread of subjects in all years).** Surprisingly, this high degree of concentration in English universities on one subject was not a very old phenomenon, but was due to the rising popularity since the First World War, and still more so since the Second, of single-subject honours courses. This in turn reflected the increasing competition for university places in particular subjects, and the tendency of selectors in university departments — for most selection outside Oxford and Cambridge is departmental — to choose candidates who could be expected to do well in them. Selection for the university, including Oxford and Cambridge, in practice has increasingly become selection for a single subject. This has had the unfortunate effect of increasing the demand and competition for places in subjects taught at school, such as English, history and the pure sciences, over and against subjects not generally taught threre, such as philosophy and engineering. It has also had the effect, until recently at least, of reinforcing the belief that high ability is specialized ability, preferably in a single subject, a belief which was institutionalized in the traditional practice of awarding honours chiefly in single-subject degrees, and relegating most general courses to the pass degree. In 1961–62 three-quarters of the honours degree students were studying a single main subject, and the proportion was expected to rise to four-fifths by their final year.* The shortness of the degree course, three years instead of four or five in most other countries, also encouraged concentration on mastering fewer subjects.

In recent years, it is true, there has been a movement to increase the number of "joint honours" (two subject) courses and to award honours in general degree courses. There is a respectable pedigree for the first in the Cambridge "Tripos" (as the degree examinations are called), in which, generally speaking, a student can take any two subjects in the successive parts; and for the second at Oxford in "Greats" (the history, literature and philosophy of classical Greece and Rome) and "Modern Greats" (modern politics, philosophy and economics). Amongst the first in the modern revival was the general honours degree in arts at Birmingham from 1947, and the common, four-subject, first year for the honours degree in social studies at Manchester from 1960. By 1960 thirteen universities, including Keele, were offering joint or general honours degrees in science.*** These courses, however, catered for comparatively few students all told, and it remained — and remains outside the new universities — true that English university education is far more specialized than any other.

Witnesses before the Robbins Committee from inside and outside the universities were very critical of what they considered over-specialization. Their complaints were chiefly on two grounds: first, that degree courses were becoming increasingly overloaded, chiefly with information rather than with the capacity to deal with it; and, secondly, that they were not suitable for an increasing proportion of the students taking them, who needed a broader education either to fit them for life in an increasingly complex world or to provide a relevant basis for an increasingly wide range of non-academic careers. There was also a need for greater flexibility in the choice of specialization, since most students came to university not knowing what their chosen subject involved or what career they wished to prepare for. These, the Robbins Committee believed, could only benefit from postponement of their final choice of subject at least until the end of the first year at university. Any loss of content in the degree course could be made up for the more academically inclined by the expansion of post-graduate courses, especially one-year taught courses rather than longer research degrees.* The relevance of these recommendations to the New Universities will appear later. Meanwhile, they underline the peculiarly English problem of early and narrow specialization.

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* *Ibid.*, p. 91.

** Cf. Home Universities Conference, 1961, *Report of Proceedings*, Address of D.W. Reece on 'The Future of the General Degree', pp. 12–20, and Notes, pp. 79–80.

*** Home Universities Conference, 1960, *Report of Proceedings*, Address of Prof. F.C. Frank on 'The Future of the General Degree', pp. 20–6, and Table pp. 82–3.

The system of higher education, finally, was inadequate to meet the demands upon it, either by students for places or by the economy for manpower. On the side of student demand we have already seen that the Robbins Committee foresaw a shortfall of 25,000 places by 1967–68. In spite of the subsequent accelerated expansion, this has been borne out in practice. In 1966–67 the total number of full-time students in higher education in Great Britain, originally planned to be 292,000 and revised as a result of the Robbins Report to 312,000, was in fact 339,100. Of these, 184,500 found places in the universities, as against an original target of 168,000 and a revised target of 187,000, so that 20,000 students over and above the Robbins figure had been absorbed into the public sector.** Since competitive university entrance standards had not fallen but on the contrary had risen, it was clear that, in spite of the creation of twenty-four new universities and the expansion of nearly all the existing ones, the provision of places still fell short of the demand. This was confirmed by the Government in October 1967 when the Robbins target of 204,000 university places in 1971–72 was revised to between 220,000 and 225,000.***

The demand of the economy for educated, highly skilled, professional manpower is much more difficult to estimate. A large number of official committees of enquiry during and since the War had attempted to forecast demand in particular fields, notably the McNair Committee on teachers and youth leaders and the Goodenough Committee on medical schools, 1944; the Loveday Committee on veterinary education and on higher agricultural education, 1944 and 1945; the Teviot Committee on dentistry and the Parry Committee on technological education, 1945; the Barlow and Zuckerman Committees on scientific manpower, 1948 and 1952, and the Scarborough and Hayter Committees on Oriental, Slavonic, East European and African studies, 1946 and 1961. With few exceptions they had drastically underestimated the future growth of demand. The Robbins Committee statisticians, understandably, considered the task of predicting manpower needs over the whole field of employment served by higher education to be impossible, and preferred to take their stand on student demand for places. But the Report underlined the fact that the demand for highly educated manpower in the one country indisputably more advanced economically, the United States, was two or three times as large as in Britain. The proportion of the American working population which had completed full-time higher education was about 9% compared with 3.4% in Britain, or about 5% if we include those who had qualified by part-time study.* Since American productivity in manufacturing industry was approximately double the British, there was a *prima facie* case for arguing that, as British productivity rose, so would the demand for educated manpower.

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* *Robbins Report*, pp. 89–90, 95–6, 278–9.

** Brian MacArthur, 'Still More Expansion needed in Higher Education', *The Times*, 13 September 1967.

*** *The Times*, 28 October 1967.

For all these reasons — because British higher education was élitist, hierarchical, too competitive, too narrowly specialized, and inadequate to meet the demands upon it — the Robbins Committee recommended a major overhaul of the system. First it recommended what was, in absolute terms at least, an unprecedented expansion in student numbers, from 130,000 in the universities and 216,000 in all forms of higher education in 1962–63 to 219,000 and 392,000 in 1973–74 and to 346,000 and 558,000 in 1980–81.** These figures were intended to be minima, and as we have seen they have already been overtaken by the expansion rate so far. To meet them it recommended the expansion of almost all existing universities except Oxford and Cambridge, the raising of the colleges of advanced technology and several other further education institutions to university status, the absorption of the teacher training colleges (except in Scotland) into the university system and the granting of the Bachelor of Education degree to their better students, and the expansion of degree courses under the Council for National Academic Awards in the further education colleges. It also recommended a large number of educational and administrative reforms, including the broadening of university courses, an increase in small-group teaching, experiment with methods of examination and assessment, more social contact between staff and students, and greater participation of non-professorial staff in academic decisions and in the general government of universities and colleges.*** For these and other fundamental recommendations, whether carried out to the letter or not, the Robbins Report will always be remembered as a major turning point in the history of British higher education, from the age of piecemeal provision for *ad hoc* demands to what may be called the age of high mass consumption of planned, comprehensive higher educational services.

The Robbins Committee made one other recommendation of particular relevance to this study: the creation of six New Universities in addition to those already scheduled. Only one of these, the one earmarked for Scotland, has in fact been founded (apart from the one in Northern Ireland recommended not by the Robbins but by the Lockwood Committee), and it is now clear that no more New Universities will be created until the expansion of existing universities is nearing the limit of what is currently considered the maximum viable size, a concept which itself is expanding all the time. Thus the Robbins Committee marked the end rather than the beginning of the movement to create New Universities. Although it accurately analysed the atmosphere of dissatisfaction with the scale and nature of British university education in which the new universities were founded, it was not itself the cause of the movement, which, except for the founding of Keele, can be dated to the period of five years before the Committee was appointed in 1961, as we shall see.

* *Robbins Report*, pp. 70, 73.

** *Ibid.*, pp. 160, 277.

*** *Ibid.*, pp. 277–91.

III

WHY THE NEW UNIVERSITIES WERE CREATED

The New Universities were created for two principal reasons, educational experiment and the expansion of student numbers. Between the creation of Keele and the other nine, however, there was a significant gap of about a dozen years which produced a marked difference in the relative importance of these two causes. Keele was founded in one period of university expansion, the rest in another, but, on the surface at least, Keele owed its foundation more to the need for educational experiment, the rest more to the need for expansion.

The origins of Keele go back to the Second World War and the passion for social reconstruction which gripped the nation once victory was in sight. A rapid expansion of university education was amongst the plans for the brave new post-war world, with the immediate aim of accommodating the thousands of demobilized servicemen who had earned the academic and the moral right to a degree course, and the long-term aim of expanding the supply of scientific and other professionally qualified manpower needed for economic and technological advance. To cater for the ex-service men and women thousands of further education and training grants were awarded by the Ministry of Education, rising to a peak of 25,967 in 1949–50, when the total number of students in the universities reached 85,421, as compared with 50,246 in 1938–39.* To meet the long-term need for expansion a number of government committees at the end of the War recommended the permanent expansion of university provision in particular subjects, notably the Barlow Committee on Scientific Manpower, 1946, which recommended a doubling of the output of scientists within ten years. The latter Committee, like the University Grants Committee in its report of the same year, thought that, since most of the civic universities were small and could be considerably expanded, there was no immediate need for new ones to be created. But, it continued,

> There is nothing sacrosanct about the present number of Universities in the United Kingdom, and we are attracted by the conception of bringing into existence at least one University which would give to the present generation the opportunity of leaving to posterity a monument of its culture.**

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* University Grants Committee, *University Development: Report on the Years 1947–52* (HMSO, London, Cmnd. 8875, 1953), pp. 11, 17.

** *Report of the (Barlow) Committee on Scientific Manpower*, (HMSO, London, Cmnd. 6824, 1946), p. 17.

The Chancellor of the Exchequer, Dr. Hugh Dalton, had already in the Autumn of 1945 let it be known that money would be made available for university expansion, including the possible establishment of one or two new university colleges. This latter piece of information, though supposedly confidential, came, probably via Dr. Barnett Stross, M.P. for the Hanley division of Stoke-on-Trent, to the ears of a number of people interested in founding a university college in that city. These included Mr. Carr, the Director of Education, Alderman the Rev. Thomas Horwood, Vicar of Etruria and leader of the Labour group in the City Council, and, above all, Lord Lindsay of Birker, Master of Balliol College, Oxford.** The City of Stoke-on-Trent and its neighbour, the Borough of Newcastle-under-Lyme, constituted the largest conurbation in Britain without a university institution. This was surprising, since the North Staffordshire Potteries, as the area was generally called, had a long tradition of ardent interest in adult and further education dating back at least to the university extension lecture movement of the 1880's, when such famous figures as Hilaire Belloc, F.E. Smith (later Lord Chancellor Birkenhead) and Cosmo Lang (later Archbishop of Canterbury) drew crowded audiences there. The reasons for this lack of a university were to be found in the social, economic and political character of the local community. It consisted at the top of a large number of comparatively small family businesses whose heads lived mostly outside the city itself and who were, with a few notable exceptions such as the Wedgwoods, too poor or too uninterested to foster local education; and at the bottom of a remarkably intelligent but low-paid and underprivileged working class with a passionate interest in education and a powerfully organised trade union and political movement which, through the local Labour Party, had captured all three Parliamentary seats and an almost permanent majority on the City Council. In the early years of the present century the Potteries had been one of the original homes of the Workers' Educational Association of 1903, and indeed the first home of the university tutorial classes — three-year evening classes of university standard for ordinary manual workers — founded jointly in 1907 by the W.E.A. and the University of Oxford under the tutorship of the celebrated social historian R.H. Tawney. From this small beginning there developed a strong connection between the Potteries adult education movement and Oxford University, through a number of remarkable extra-mural tutors who included, significantly for the future University College, A.D. Lindsay. The movement produced the first, unsuccessful, proposal for a university college in 1919, and founded in 1945 the Wedgwood Memorial College, the first residential adult education college under the Education Act of 1944.

When, therefore, in 1945 the Labour Government was contemplating the expansion of the universities and the possible foundation of a new one, Stoke-on-Trent was in a very good position to seize the opportunity. Hugh Dalton, responsible as Chancellor of the Exchequer for distributing money to the universities, was a former W.E.A. tutor and sympathetic to an approach from that quarter. A.D. Lindsay, as Master of Balliol College,

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* This account of the foundation of the University College of North Staffordshire, later the University of Keele, is based on A.E. Teale, 'The Origin of the Keele Experiment', *North Staffordshire Journal of Field Studies*, I, 1961; W.B. Gallie, *A New University: A.D. Lindsay and the Keele Experiment* (1960); Jon James *et al.*, *Keele after Ten Years* (Keele, 1961); discussions with Professor A.E. Teale and with Dr. Harold Taylor and Professor W.A.C. Stewart, past and present Vice-Chancellors; and my own personal knowledge of most of the persons and events at the time.

Oxford, and a Labour member of the House of Lords, had influence with both Oxford and the Government, and wrote to Sir Walter Moberly, Chairman of the UGC, that if there were any prospect of founding a university college in the Potteries " it might be possible to get their University to take a special interest ". And R.H. Tawney, now a prominent member of the UGC, was able to write to Miss Gladys Malbon, Secretary of the North Staffordshire W.E.A., that the time was ripe for reviving the proposal for a university college; Miss Malbon organised a deputation, consisting of two local Members of Parliament, Dr. Stross and Ellis Smith, Mr. Carr, the Director of Education, and herself, which met Sir Walter Moberly, R.H. Tawney and the Secretary of the UGC on 27th March 1946, who encouraged them to prepare a concrete proposal. The City Council approved the proposal in May, and set up a University Exploratory Committee, consisting of eleven representatives from Stoke-on-Trent, two from the Staffordshire County Council, one each from the Boroughs of Newcastle-under-Lyme and Burton-on-Trent, two from the North Staffordshire W.E.A., and three of the Directors of Education, under the chairmanship of Lord Lindsay, representing Oxford University.

Thus far the project was not very different from many other proposals which had been and were still being made by local communities seeking the prestige, the intellectual and cultural stimulus and economic benefits of a university. The original deputation of the UGC stressed purely local needs, for a medical school, a more adequate supply of school teachers, science facilities to support local industry, and increased provision for adult education. Indeed, several other areas, also stimulated by the favourable post-war climate, put forward proposals to the UGC on much the same grounds, including Brighton, York, Norwich, Kent, Coventry and Lancaster. What put the North Staffordshire scheme in the lead was not merely that it was urged by more influential prople but that those same people produced the most innovatory and experimental proposal.

That it was so was entirely due to Lord Lindsay. As a teacher of philosophy at inter-war Oxford he had been disturbed by the increasing departmentalism of university teaching, and had helped to introduce the course in " Modern Greats ", the combined honours degree in modern philosophy, politics and economics, which became to many twentieth-century politicians, civil servants and other administrators what classical " Greats " had been to the Victorians. He was also profoundly influenced by such European educational philosophers as Ortega y Gasset and Jacques Maritain, who preached that a university should introduce students to the unity of human knowledge and to their responsibilities to the wider community which gave them the privilege of leisured study.* Indeed, as a product of Balliol College he could be said to have inherited the latter belief from Benjamin Jowett, T.H. Green, Arnold Toynbee, and the great Victorian Balliol men who had founded the Oxford tradition of service to the wider community, amongst the hungry slum-dwellers of East London and the education-hungry potters and miners of North Staffordshire. Lindsay was also a passionate believer in the need for continuous educational experiment, and he was convinced that no experiment was possible unless the new university college was free from the stultifying tutelage in which most other university colleges had passed their formative years. His first letter to the UGC on the North Staffordshire proposal suggested that Oxford University might "help to conduct examinations, and get rid of the London External Degree". It was his determination and resourcefulness which now carried the project through all the doubts and difficulties raised by the UGC and the other universities, and brought the new university college into existence as an independent institution able to grant its own first degrees. In this one case there is no doubt whatever who was the innovator. It was Lindsay.

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* Ortega y Gasset, *Mission of the University* (English trans., 1944); Jacques Maritain, *Education at the Crossroads* (English trans., 1943).

Like most good entrepreneurs, Lindsay had no one fixed programme for carrying out his experimental ideas. As long as the framework met his demand for "seeing things together" and yet providing the "lessons for hard, disciplined thought" which were usually confined to the single-subject honours school, he was infinitely flexible about the details of the syllabus. This was just as well, for his first detailed plans, easily carried by force of intellect and personality through the local Exploratory Committee, were opposed by the UGC and the universities whose co-operation he sought. The general outline of the scheme, presented to the UGC in July 1946, drew an encouraging response. Under it the college was to have two main aims: first, "it should aim to be a centre and focus of higher education in the region; secondly, it should aim to provide in at least one field of higher education a degree course of a character and quality as is provided by no other university, and which therefore from the outset would attract not merely local but national, and if possible international, interest". At first a single degree scheme in social studies would be offered, followed later by one in the physical sciences "directly related to local industries". The college should be "to a predominant extent residential", and in order to "enjoy freedom to experiment" should be empowered to grant its own degrees. The more concrete "Memorandum to the University Grants Committee on the proposal for a University in North Staffordshire", however, provoked strong criticism at a meeting with the UGC in November 1946. Most of the members thought the range of subjects too narrow, and in particular that the two degree courses offered were both open to objection, that in physical chemistry because it was inadequate either for research in ceramics or for training science teachers, that in social studies because it offered too few school subjects for intending teachers. The project was saved only by the enthusiastic support of Sir Walter Moberly and R.H. Tawney, who particularly welcomed the interdisciplinary requirement for scientists to take a course in social studies and *vice versa*. The next month the UGC indicated that it would consider the application sympathetically on two conditions, "that the basis of studies in Science and Arts be adequately broadened", and that for the conferment of degrees "adequate arrangements have been made for sponsorship by a university or universities" and that the proposal could be brought into line with university policy for the country as a whole.

The need to find sponsoring universities and to convince them that the curriculum was in line with general university policy was to cause most of the Exploratory Committee's difficulties and to delay the opening of the college by as much as two years. Lindsay set out to persuade the Universities of Oxford, Birmingham and Manchester to act as sponsors, to supervise the examinations, and guarantee the degrees. Oxford agreed, subject to the consent of the other two, but the others were so reluctant that at one stage Lindsay nearly abandoned them and won the UGC's permission to go forward with Oxford alone. To meet the objections of Birmingham and Manchester he reluctantly added English and history to the natural sciences (chemistry and physics) and social studies (economics and politics), and agreed to give every student a two-year general course, followed by a one-year honours course in two subjects. Meanwhile, an accident occurred which transformed the situation. Lindsay's nominee for the post of Principal of the college, Mr. John Fulton, Fellow and Tutor of Balliol College, was attracted away to the Principalship of Swansea University College, and Alderman Horwood persuaded Lindsay himself, although an ailing man of seventy whose doctors gave him only three years to live, to step into the breach. This translation of the chief innovator to the job of first manager of the enterprise may have helped the UGC to back the experiment more confidently, and to win over the reluctant sponsors.

The crisis came to a head at a meeting of the Exploratory Committee with the representatives of the three universities on 5 February 1949. Lindsay was lucky in the choice of chairman, Professor Roy Pascal of Birmingham, who had been involved in the introduction of a broad general honours degree in arts there two years earlier, and was sympathetic to university reform. He suggested that the new college should offer a general degree in which honours and pass should be measures of performance rather than exclusive courses. This Lindsay accepted, together with the right of the proposed sponsors to suggest amendments to the curriculum, and in June 1949, the three universities agreed to act.

At the subsequent meeting in July, Lindsay produced his final innovation, a "common course of lectures designed to implement the approved general scheme of studies". This was the first appearance of the innovation for which Keele is best known, the "foundation year", or first-year course taken by all students, "designed as a whole to give an understanding of the heritage of Western civilization, of modern society, and of the methods and influence of the experimental sciences". Its interpolation into the already full course had the effect of extending the degree to four years, and made the new college unique amongst the English universities in the compulsory length of its course for all students. The final shape and purpose of the curriculum is set out in the leaflet sent out to all candidates for the first academic posts advertized in December 1949:

> One of the main objectives which it is hoped to achieve is to give every graduate as wide an understanding as possible of the factors which have been operative in building up our present civilization and of the forces that are current in the world today ... It is intended that the foundation studies taken before specialization should be so presented as to give a comprehensible and integrated conception of the basic facts and principles of the main subjects to those who will not later specialize in such studies, while at the same time being a sound foundation for such specialization. The relationship of particular studies to knowledge as a whole, the effect that the historical development of a subject had on past civilization and the part that it plays in present human activities will be stressed, in addition to the elucidation of its fundamental principles ... It is desired to break down as far as possible any clear cut divisions between different branches of study and to ensure that each student has a sympathetic understanding of the functions and importance of all the main human activities. The Professors

> and Heads of Departments will have the responsibility of integrating their courses on these lines.

The contents and significance of the Keele foundation year, together with other curricular innovations such as the cross-disciplinary requirements of the later years of the course, will be discussed below (Part II, Chapter III). Here it is enough to note that the foundation year was the most original innovation in British university education in this century. That the example was not followed in other universities, even in the New Universities of the 1960's, was not due to its failure but mainly to the impossibility (outside Scotland) of persuading the Government to finance further four-year courses. Other curricular innovations at Keele did, however, have a profound influence on the other New Universities, especially the general broadening of the degree course and the cross-disciplinary element built into the syllabus.

Amongst the non-curricular innovations pioneered by Keele, some, such as the residential requirement for all staff and students, were also incapable for financial reasons of realization elsewhere, but others, such as its flexible Boards of Studies rather than statutory Faculties for grouping Departments, or the wide representation of non-professorial staff on governing bodies of the College, were to be widely imitated. As compared with later New Universities, Keele was badly handicapped by the restricted scale of planning allowed it by the UGC. The original project was for a college of 800 students, a very small figure by the standards of the "minimum viable size" of 3,000 within ten years laid down for the later ones, but even this was cut back to 600 by the UGC. More recently it has been allowed to grow to three times that size, but it has continued to be handicapped by the high cost of its four-year course and the principle of complete residence, which latter Keele is now beginning to abandon. Although it now plans to have 2,150 students by 1972 and an ultimate target of 3,000 it is unlikely that, as long as its graduates cost 33% more time to produce than the national average, it will ever be allowed to expand as fast as the other New Universities.

Apart from these unavoidable handicaps, Keele also made some avoidable mistakes. One was to pay its professors salaries £200 a year lower than the basic rate elsewhere. This, as the Vice-Chancellor of a later New University put it, nearly "spoiled the ship for a ha'porth of tar". In the circumstances Keele was lucky to recruit so able a professoriate as it did, and to prevent more of them from leaving for higher-paid posts elsewhere—an achievement which speaks much for the stimulus and excitement of its educational innovations. Another, even within the cramping limitations on planning, was to fail to appoint a full-time site development architect, but to make do with the well-meaning but unadventurous services of the local City Architect's office. This and the piecemeal planning enforced by circumstances have resulted in one of the least distinguished campuses, in one of the most naturally beautiful of university parks, in the country.

Nevertheless, Keele has earned its high place in the history of educational innovation in Britain. As the University Grants Committee observed in 1953,

> There are three respects in which it may be said to be experimental. In the first place, it gives effect to the educational views of Lord Lindsay of Birker, its first Principal, to whose inspiration, more than to any other agency, the college owes its life and form. It was a

> tragedy that his death should have deprived his colleagues of his illuminating guidance and counsel so soon after the opening of the college. It is the declared aim of the college to offer a curriculum of a new type, free from what its founders regard as the excessive specialization called for by university curricula of the normal type... Such a course would not be possible for students taking external degrees of the University of London, and this fact has made necessary the second experimental feature, which is the arrangement by which the college has power to grant its own degree of Bachelor of Arts under the sponsorship of the Universities of Oxford, Manchester and Birmingham... There is a third respect in which the establishment of the college is experimental, though not deliberately so. Never before have the founders of a university institution in this country been in a position to dispense with an endowment and put their plans into effect with the backing of the State.*

It was this last experimental feature, the provision of Government finance, which was to be the key to the development of further New Universities. In this, as in so much else, Keele was the forerunner of all the rest.

The New Universities of the 1960's owed their origins more to the need for expansion of student numbers than to the demand for educational experiment. At least, this is true of the public case presented for their establishment, although there is reason to believe that in the minds of those most responsible, educational experiment may have been uppermost. On the need for expansion it is generally believed, even by those in the universities, the UGC and the Association of University Teachers who responded earliest to it, that the increased demand for university places which would arise in the 1960's was not foreseen by their predecessors. This is not strictly true. In the period of quiescence — some would say of stagnation — between the two expansions, the UGC clearly foresaw not only the obvious effect of the so-called " bulge " in the birth rate, which reached its peak between 1946 and 1948 and would produce an unprecedented number of university applicants between 1964 and 1966, but also considered the *possibility* at least of the so-called "trend", the tendency of large numbers of pupils to stay on at school after the age of 16 and qualify for university entrance. In its 1953 Report the UGC forecast that, to accommodate the bulge as it emerged from the schools into higher education "a marked increase in student numbers will be required from about 1960 onwards if the proportion of each age group which reaches the university is to be maintained". They went on to point out that "in certain overseas countries (both in Europe and America) university students form a far higher proportion of the total population than in this country", that the proportion was higher in Scotland and Wales than in England, and that, in the words of the Zuckerman Committee on Scientific Manpower, 1952, "if our institutions of higher education fail to grow, they will not be able to keep pace with the growth in the demand for scientists necessary to promote industrial efficiency and productivity". Finally, they declared that "We should welcome an increase in the student population", provided that employment opportunities, especially for arts graduates, were available, that additional accommodation and equipment for science students were forthcoming, and that degree standards did not decline. Until the rise in the birth rate took effect, however, "the increase could only come through the retention in the grammar schools of a greater proportion of the more intelligent pupils who now leave prematurely". On this last point they were most prescient: since in England and Wales in 1952 only 6.6% of the age group were still at school at the age of 17, those who had left "must include a considerable number who leave for reasons other than lack of academic promise, and who would be worthy university students if means could be found to retain them at school".*

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* UGC, *University Development... 1947 to 1952*, p. 10.

What the UGC did not, and could not at that time, foresee was that the post-bulge decline in the birth rate in the 1950's would be succeeded by a further rise to a higher and more permanent "plateau" from about 1960 onwards, and that meanwhile the trend to stay on at school and qualify for university entrance would soon begin to accelerate so as to pile the bulge of university applicants in the mid-1960's even higher than the mere natural increase led them to expect. The proportion of 17-year olds remaining at school rose from 6.6% in 1950 and 1952 to 7.9% in 1954 and to 12.0% in 1962, when the Robbins Committee and the Ministry of Education were to agree that it was likely at a conservative estimate to reach 18% by 1973 and about 22% by 1980.** The significance of these figures, when they appeared, was that all existing plans for university expansion were inadequate and out-dated, both in the long-term and, more urgently, in the short. But it is important to realize that they were not visible in the early 1950's, and in particular that the trend to remain at school, the more variable and unpredictable factor, became persistent only from about the middle of the decade.

The turning point in public opinion on university expansion can be dated to the Home Universities Conference at the Senate House of London University in December 1955. One of the three sessions at this annual meeting of representatives of all the universities, the University Grants Committee, and the Association of University Teachers was devoted to a discussion of "the age group bulge and its possible effects on university policy". The opening speakers, Guy Chilver of the Queen's College, Oxford (now Professor of Classical Studies, Dean of Humanities and Deputy Vice-Chancellor at the New University of Kent) and Professor R.G.D. (now Sir Roy) Allen of the London School of Economics, considered that the bulge and its trailing wave could easily be accommodated, except for the four years of its peak from 1964 to 1967, by a small permanent increase of 2,500 entrants a year, equivalent, allowing for a majority of three-year courses and smaller numbers of four-year and post-graduate courses, to a permanent increase of 10,000 places, producing a more or less stable long-term target of 90,000 students. The peak of the bulge would require a further, temporary rise of 15,000 places, to about 105,000 for the years 1964 to 1967. It could be accommodated by such means as a temporary stretching of staff-student ratios and sharing of university facilities, the rearranging of national service in the armed forces to spread the peak applicants over the years before and after, and the temporary raising of entrance requirements "to keep out some, but by no means all, of the additional applicants". The trend was airily discounted, by questioning whether an increase in sixth-form pupils necessarily meant an effective increase in *eligible* university applicants, and by a somewhat cold-blooded assumption that neither the schools nor the parents could afford to keep larger numbers at school during the four years of greatest stress.*

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* UGC, *op. cit.*, pp. 21–2.

** *Robbins Report, Appendix One*, pp. 102–3.

The reaction of the Conference to this extraordinarily complacent approach was explosive. It was headed by Lord Simon of Wythenshawe, head of two well-known engineering firms and Chairman of the Council of Manchester University. He declared that the proposed student numbers were "totally and almost fantastically inadequate", that Britain had both the smallest proportion of the age group in the universities of any civilized country and a desperate shortage of scientists and technologists, and that the trend to stay on at school was increasing at the rate of 5% a year which would mean a doubling of student numbers within fifteen years, or, given the birth-rate bulge, more than double the existing total by 1965. There was a very serious and increasing emergency, and he concluded:

> I do hope that as a condition of the strength and welfare of the country, and almost of its survival as a great power, we shall immediately set to work on a great building programme for the universities and on achieving a steady and rapid increase both in total students and, more especially, in technologists.**

Lord Simon was followed by speaker after speaker supporting him and demanding action to expand the universities. How much notice the seven members of the UGC who were present took of the discussion is not known: not one of them spoke. Six months later the Chairman of the UGC could still say: "There seems to be a reservoir of potential students, *though a relatively small one,* in those who leave school before eighteen".*** And nearly a year later, in November 1956, the Treasury announced capital grants for university buildings which assumed a target of 106,000 students in the mid-1960's, almost exactly the same as Professor Allen's, though now a permanent rather than a temporary figure.

Amongst other university people, however, the discussion at the Conference provoked a great deal of rethinking. The Association of University Teachers, for example, at its next Council meeting in May 1956, set up a working party "to consider forthwith AUT policy on the expansion of the universities". After lengthy discussion and several interim reports this eventually produced the *Report on a Policy for University Expansion,* approved at the December meeting of the Council in 1957 and published in May 1958, which estimated that the need for university places at existing entrance standards would rise to 145,000 from 1965 onwards. It suggested that all universities which were now below the maximum viable size consistent with traditional university life, which it set at 4,500, should rise to that figure, but that this would still leave a shortfall of 23,000 places. It therefore proposed the founding of at least five new universities, which should also seize the opportunity to experiment with curricula and teaching methods, and to this end should follow the precedent of Keele and grant their own degrees.

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* Home Universities Conference, 1955, *Report of Proceedings*, pp. 81–95.

** *Ibid.*, pp. 95–104; his forecast for 1965 has been borne out by events.

*** Lord Annan, 'Higher Education', in B. Crick, ed., *Essays on Reform, 1967* (1967), p. 25. (my italics).

The AUT Report had already been to some extent overtaken by events. In February 1958 the Treasury announced new building grants which raised the long-term target from 106,000 to 124,000 student places, with a temporary rise during the period of the bulge and after 1965–70 to 135,000. At the same time it announced financial support for the early building of a new University College of Sussex at Brighton.

When and why had the Treasury, and the UGC which advised it on university policy, changed their minds? There is considerable doubt about this, owing to the hindsight which inevitably affects the later accounts. The Chairman of the UGC, Sir Keith Murray (now Lord Murray of Newhaven) gives the credit for first seeing the implications of the combined effect of the bulge and the trend to the Secretary, Sir Edward Hale. If so, he may have been awakened to them at the Home Universities Conference in 1955, but he remained silent there, and the UGC's advice did not materially affect Treasury policy during the ensuing twelve months. The UGC's report on *University Development, 1957–1962* gives much credit to "the comprehensive and well-reasoned memorandum" proposing a university college at Brighton, prepared by the Director of Education, Mr. W.G. Stone, for the Borough Council, and presented to the UGC in February 1956:

> It raised for us in practical form four immediate questions. How many new institutions were likely to be needed? What sort of institutions would be required to meet future needs? Where should such new institutions be located? What procedures should be followed to ensure sound foundations?*

Yet the previous report, for 1952–57, which was much nearer to the event, put the Sussex project firmly in the much narrower context of the local need for a university college in south-east England:

> The increased demand for university education has led to great pressure on London University. Owing to the congestion of London sites the development in that area of a university institution is a particularly difficult and expensive operation. Moreover, most of the colleges of London University are deficient in residential facilities, and owing to the difficulty of finding lodgings students have to live at considerable distances. For these reasons we have been anxious to find means of relieving the pressure on London University, and the proposed University College of Sussex offers an opportunity of doing so. There is now no university in the densely populated area south of the Thames east of a line from Reading to Southampton. A new institution at Brighton would thus help to serve the population of an area which is now largely dependent on London University.**

This rather curious argument, that universities exist mainly to serve the students from the surrounding population, which may have been true of some of the civic ones down to the Second World War, was already out of date by this time, when the system of grants enabled students to go to universities far from their homes, as in fact was underlined by the very next sentence of the report, which emphasized the availability of lodgings in Brighton. The fact that it was used, however, suggests that the UGC as late as September 1958 did not wish to commit itself publicly to general arguments for expansion which would imply the need for more than one new university institution.

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* UGC, *University Development, 1957–1962* (HMSO, London, Cmnd. 2267, 1964), p. 92.

** UGC, *University Development, 1952–1957* (Cmnd. 534, 1958), p. 13.

The two reports cease to be incompatible, however, when we turn to Mr. Stone's memorandum on the Brighton proposal. This emphasized both the national need for expansion due to the combined effect of the bulge and the trend and the regional need for a university in the south-east, not so much to cater for local students as for the educational, social and cultural benefits it would bring. What in fact had happened was that Mr. Stone had transformed the perennial civic demand for a university in Brighton, which dated back to 1911 and was revived in 1947 and 1954, into a national case for new universities, and proceeded in the course of negotiating the Brighton project to convince the UGC of the wider need. When in July 1955 Brighton Borough Council revived the proposal once again and instructed their Education Committee to report on "steps taken and projected to secure a university college", the Director of Education at first considered the scheme premature, but a study of the bulge and the trend convinced him by December 1955 — like Lord Simon and other speakers at the Home Universities Conference in the same month — that there was a national case for a new university. He therefore reported favourably to the Council and drew up the memorandum of February 1956, which the UGC found "of immense value". Negotiations with the UGC were long drawn-out, from April 1956 to February 1958, and in the meantime Brighton Council strengthened its case by winning the support of the neighbouring authorities, East and West Sussex County Councils and Eastbourne and Hastings Borough Councils, by offering Stanmer Park as the site for the college and £12,000 a year as an endowment, and by calling a public meeting of influential supporters. The meeting, in the Summer of 1956, was chaired by the Duke of Norfolk, and addressed by a number of eminent local people, including Lord Hailsham, a prominent member of the Government and later, at a crucial stage for university expansion, Minister for Education and Science. In February 1957 the Government authorized the UGC to support the project provided they were satisfied with the plans and the public support for it, and in February 1958 the Chancellor of the Exchequer announced that £ one million and a half of the new capital grant of £60 million for the universities in 1960–63 was provisionally reserved for building the University College of Sussex. The UGC gave its formal approval to the scheme on 1st July 1958.*

The Sussex negotiations not only "educated" the UGC to the general need for new universities, but faced them with the practical questions of what sort of institutions they should be. how they should be set up, and who should be responsible for appointing their chief officers, planning their physical development and educational objectives, and guaranteeing their academic standards. They found the answer in a genuine administrative innovation, an Academic Planning Board, consisting mainly of eminent academics who would enjoy the confidence of the other universities, but who were appointed as individuals, not as representatives of their own universities. In this they resembled, whether intentionally or not, the members of the UGC itself. The Sussex Board included a layman (an industrialist) but, unlike the Boards for later New Universities, no woman. It was nominated by the UGC but appointed, in April 1958, by the University College of Sussex Ltd., the joint-stock company set up to give legal form to the college before it received its Charter and to enable it to receive donations, including financial aid from the Local Authorities. It consisted of a chairman, Sir James Duff, then Vice-Chancellor of Durham University together with Professor D.G. Christopherson of Imperial College, London (now his successor as Vice-Chancellor of Durham, and also Chairman of the Committee of Vice-Chancellors and Principals of the Universities of the United Kingdom), Dr. (now Sir) Charles Wilson, Vice-Chancellor of Leicester University (later Chairman of the Committee of Vice-Chancellors and now Principal of Glasgow University), Dr. Walter Oakeshott, Rector of Lincoln College, Oxford, Professor Sir Neville Mott of Cambridge (later Master of Gonville and Caius College), Dr. (now Sir) Ronald Holroyd, Deputy Chairman of Imperial Chemical Industries Ltd., and Mr. Stone, the Brighton Director of Education, who acted as Secretary. Their terms of reference which, somewhat modified, became the model for the Academic Planning Boards of all the later New Universities were:

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* W.G. Stone, 'Steps Leading to the Foundation of the University', in David Daiches, ed., *The Idea of a New University: An Experiment in Sussex* (1964), pp.168–92.

1. To consider the arrangements by which the universities may be assured of the maintenance of satisfactory academic standards at the College, on the assumption that the College will award its own degrees of Bachelor of Arts and Bachelor of Science.
2. To consider the range of subjects to be studied at the College during the first years of its existence and the length and general character of the under-graduate courses.
3. To prepare, in consultation with the local Committee, a petition for a Royal Charter for the college and a draft of such a Charter, and to select the persons to be named in those documents as the first governing body of the College.
4. To select and nominate, in consultation with the local Committee, the first Principal of the College, and, with his advice, Professors of the principal subjects.*

During the ensuing discussions a number of modifications were made in the form and powers of the College of considerable significance to the later New Universities. The UGC decided that, in the Chairman's later words, they had made a mistake in not giving Sussex full university status, and so the College before it opened became the University of Sussex with a Vice-Chancellor as academic and administrative head instead of a Principal, and the right to award higher as well as first degrees. They also evolved a further device for maintaining academic standards after the initial period of gestation covered by the Academic Planning Board. This was an Academic Advisory Committee, which overlapped in membership and functions with the Academic Planning Board, and was in practice the heir to the latter's residual functions and powers as the chief officers, the Council and the Senate of the University came into being and took over most of them. Their powers and functions were:

1. To advise the Council and the Senate on academic matters.

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* UGC, *University Development, 1957–1962*, pp. 95, 221.

2. To approve the institution of degrees other than honorary degrees and degrees of Bachelor of Arts and Bachelor of Science.
3. To keep under review and to certify annually to the Council that they have satisfied themselves about the procedure for the appointment of academic members of staff and the organisation and conduct of university examinations including the conditions of appointment and service of external examiners.

The composition and powers of this Committee were written into the University's Charter and Statutes, so as to make them binding in law, though there was included machinery for winding itself up when, as the UGC expected after about ten years, the University had earned the right to stand on its own feet.* (In Sussex it was wound up after five). Their chief means of guaranteeing academic standards, in Sussex as in the later New Universities, were the same as those operating in existing universities:

1. to guarantee the standards of the academic staff the Academic Planning Board, and later the Council and Senate with the advice of the Academic Advisory Committee, set up *ad hoc* appointing committees which included eminent assessors in the appropriate subject from other universities, and one or more members of the Board or Committee;
2. to guarantee the standards of the degrees the same bodies appointed external examiners from other universities to examine the papers and theses of candidates alongside the internal examiners. These traditional arrangements, which called in the services of independent outside experts in each field of study, were found to be a much better guarantee of standards than any general system of corporate sponsorship by universities as at Keele, where, indeed, the same system of external assessors and examiners was also adopted.

The negotiations between the UGC and Sussex also strikingly modified the concept of the size which a New University was expected to reach within its first decade. The credit for this is claimed by the first Vice-Chancellor, Mr. (later Sir) John Fulton (now Lord Fulton), who was none other than the man who, as Lord Lindsay's nominee, might have been the first Principal of Keele. The original plan, no doubt with Keele in mind, had been for a university college of 800 students. Fulton argued in the discussions – and in public at the Home Universities Conference in 1960 – that a reasonable spread of subjects in a fully viable university required an academic staff of 350 to 400, say 375, and that this at the current staff-student ratio of 1 : 8 implied a student body of at least 3,000. He also urged that this target should be achieved quickly, within ten years, so as to maintain the initial momentum and pioneering spirit and acquire the large-scale facilities and meeting of many minds which attract distinguished scholars and able under-graduates.** Whether as a result of these arguments or not, the UGC came to feel "strongly that any new institution should aim at not less than 3,000 full-time students as a minimum target,*** and accordingly increased the basic capital grant for building Sussex from £ one and a half million to the £6 million which quickly became the accepted norm for the building of New Universities.

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* *Ibid.*, p. 106.

** Home Universities Conference, 1960, *Report of Proceedings*, Address of J.S. Fulton on 'New Universities', pp. 44–54; Sir John Fulton, 'New Universities in Perspective', in Daiches, ed., *op. cit.*, p. 16.

*** UGC, *University Development, 1957–1962*, p. 94.

Finally, the Academic Planning Board, in addition to drafting the Charter and Statutes, had to report to the UGC on its plans for the range of subjects and degree courses to be taught at Sussex. They wisely took over the basic scheme of studies put forward to the UGC by the Promotion Committee, as modified in discussions with the Vice-Chancellor and the newly appointed professors as they became available. This was a scheme for a balanced institution divided about equally between arts and social studies on one side and, on the other, pure science and engineering science of a more general nature than was taught in the neighbouring technical college, or, indeed, in most university and technical college engineering departments. On the arts and social studies side, at least, it was to break away from the traditional departmentalism of the older universities by a system of overlapping "schools", in which all the students were to read for honours and to take, especially in the early stages, a broader course than was customary in the usual honours degree. The "new map of learning", as Professor Asa Briggs, first Dean of the School of Social Studies, was to call it, which was to have a profound effect on the thinking of later New Universities, will be discussed in the appropriate place below.

The Charter was granted on 16 August 1961, and in October the University of Sussex opened its door — in a couple of Victorian terraced houses on the London Road — with five professors, six other academic staff, and 52 students (17 men and 35 women), all in arts and social studies. This was only a token start, and the real beginning came on the Stanmer site at Falmer in October 1962 with 434 students (216 men and 218 women). Since then Sussex has more than achieved its target of 3,000 students in seven rather than ten years, and overtaken Keele to become easily the largest of the New Universities. With its favourable climate, attractive surroundings and nearness to the academic and social facilities of London, as well as its growing academic reputation and aesthetic appeal, it has proved a magnet for staff and students alike. Its success, and the publicity which has attended it, have created an image in the public mind of a New University as an exciting and stimulating place for young people to go, both to learn and to enjoy themselves, which has greatly benefited the other New Universities and given them a flying start. But the greatest contribution made by Sussex was the dialogue which it conducted with the UGC in the five years before it opened, which established both the need for New Universities and the practical decisions on their size, rate of growth, methods of establishment and of guaranteeing their academic standards, and complete freedom to experiment with their curricula and methods of teaching and examination. As the Vice-Chancellor of East Anglia was to express it, "As a historian it is difficult for me to conceive of the Norwich 'experiment' without the precedents of Keele and Sussex. We have benefited greatly from the detonations with which they have cleared the air".*

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* Frank Thistlethwaite, 'The New University of East Anglia', in M.G. Ross, ed., *New Universities in the Modern World* (1966) p. 57.

The success of Brighton in securing a university stimulated a host of other ambitious localities into action. In the three years following the announcement of Sussex in 1958 the UGC received enquiries and applications from twenty-eight different areas, twenty of them in England and eight in Scotland, for most of which Promotion Committees were set up.* During the same period the proportion of 17-year olds remaining at school in England and Wales (which had been 6.6% in 1950 and 8.1% in 1955) continued to rise, from 9.2% in 1957 TO 11.1% in 1960, and so did the proportion of school leavers with the two A-levels necessary for university entrance (4.4% in 1955), from 4.9% in 1957 to 6.2% in 1960.** The "first-class crisis" predicted at the Home Universities Conference in 1955 was becoming too urgent to be ignored, and during 1959 the UGC revised its estimate of the demand for student places (planned in 1958 at a long-term figure of 124,000, with a temporary rise in 1965–70 to 135,000) to a new figure of 168,000, rising to 200,000 in 1968, and to 229,400 in 1976. Such long-term forecasts, which were to become familiar with the Robbins Report, were at that time an innovation in themselves, in a context in which most Government departments looked only one year ahead, and the UGC itself had been exceptional in looking ahead five years. As "a minimum first instalment" towards meeting this huge increase in demand the UGC persuaded the Government to accept a target of 170,000 – 175,000 places by the late 1960's, and gave notice that the achievement of this would almost certainly entail the creation of additional universities. Discussions with the existing universities on how far they would be willing to expand, given the resources, produced by mid-1960 a total planning figure for the early 1970's of 155,500, leaving a shortfall of over 40,000 places on the estimated demand, and of about 20,000 places on the minimum target figure. As we shall see, it was in the shadow of this impending crisis that the Government authorized the establishment of six more new universities.***

The decision to found the first two of the six was in fact taken before the full magnitude of the crisis was known. In April 1959 the UGC set up a Sub-Committee on New Universities "to examine and report on proposals received by the University Grants Committee for new university institutions". Significantly it included, amongst other eminent persons, Dr. F.A. Vick, one of the first professors and the first Vice-Principal at Keele and Acting Principal on Lord Lindsay's death, and Professor Asa Briggs, who was to be the first Pro-Vice-Chancellor and Dean of the School of Social Studies at Sussex. A year later, in April 1960, the UGC was able to approve the applications for the Universities of York and East Anglia.****All this suggests that the UGC was anxious, quite apart from the need for expansion, to found new universities for their own sake. They recognized that new universities could do little to relieve the critical situation that was developing in the second half of the 'sixties, and would make a significant contribution only in the early 1970's, when indeed their own estimates showed a slackening in the growth of the demand for places.

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* UGC, *University Development, 1957–1962*, pp. 95–6.

** *Robbins Report, Appendix One*, pp. 103, 107.

*** UGC *University Development, 1957–1962*, pp. 73–5.

**** *Ibid.*, pp. 96, 100, 204.

It would appear that other considerations than the mere expansion of numbers weighed at least as heavily in the motivations of the UGC. When I put this point to Lord Murray, their Chairman during the critical period, he replied that "It was one-third numbers and two-thirds new ideas". In other words, he and his colleagues had become convinced that university education needed a shake-up, an injection of new concepts and methods to shake it out of its complacent routine of specialized single-subject honours courses, insular departments which often obstructed fruitful study and research at the boundaries between subjects, and lack of awareness of the needs of students, especially those not seeking academic careers, in a new, more complex and rapidly changing world, in which the greater part of the top positions would be filled by graduates, most of whom would need to change careers more than once in their working life-time. The need for experiment in university education, and the difficulty of getting it in the existing institutions, are underlined in their 1964 report:

> In the rapidly changing world of today, when the growth of scientific knowledge creates ever more difficult problems for the educator, there is a need for constant experiment in the organisation of university teaching and the design of university curricula. New institutions, starting without traditions with which the innovator must come to terms, might well be more favourably situated for such experimentation than established universities.*

It was not merely that the New Universities would teach themselves new methods of study, research and "education for life". It was hoped that they would discover and test means which the others would find worthy of emulation. Whether or not this hope was justified we must discuss below. Meanwhile, there can be no doubt that, while the need for expansion was the immediate cause and opportunity for creating the New Universities, the ultimate consideration in the minds of the men and women chiefly responsible for establishing them was the need for educational experiment.

The other six New Universities of England and their two fellows in Scotland and Northern Ireland were the only successful amongst a field of no fewer than thirty-one competitors. Most of the English ones had a long history behind them of attempts at founding a university. Five out of the six had, significantly, made at least informal enquiries to the UGC, backed by Promotion Committees, at much the same time as Keele. The City of York, which had first petitioned Parliament for a university as long ago as 1641, sent a deputation to the UGC in 1947 and felt sufficiently encouraged to set up a University Planning Committee. This was taken over, two years later, by the York Civic Trust, a body of private citizens interested in the preservation and improvement of the ancient Northern capital, as its Academic Development Committee, which shortly founded the Borthwick Institute of Historical Research and the Institute of Advanced Architectural Studies, both of which have since been incorporated within the University. The Committee, separated from the Civic Trust, was stimulated by the success of Sussex to make an informal approach in 1959 to the UGC and to set up a University Promotion Committee — under the chairmanship of the Archbishop of York — which in December made a formal application. It was approved on 19 April 1960, and in September the Academic Planning Board was set up with, in the chair, Lord Robbins, Professor of Economics in London University and shortly to be appointed to his famous Committee on Higher Education. As Vice-Chancellor the Board selected Lord James of Rusholme, High Master of Manchester Grammar School and for ten years up to 1958 a member of the UGC. He was appointed in February 1961 but did not take up the post until January 1962, a delay he now regrets. The University rented temporary premises, the ancient King's Manor, from the City, and opened its doors in October 1963 to 229 students.* It moved the first departments out to its permanent site at Heslington, just outside the City, in October 1965.

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* *Ibid.*, pp. 74, 93.

Norwich was a similar cathedral city with a long intellectual and cultural tradition — "the Athens of East Anglia" — which made proposals for a university in 1910, 1919 and 1947. Stimulated by the news of Sussex, a speech by the President of the Chamber of Commerce and a luncheon meeting of City aldermen and officials led to the formation of a University Promotion Committee, in which the leading figure was the wealthy confectionary manufacturer, Lord Mackintosh of Halifax, later first Chancellor of the University. During 1959 the City won the support of the main County and Borough Councils throughout East Anglia for a formal application in December, which was approved by the UGC on the same day as York's, 19 April 1960. The Academic Planning Board, under the chairmanship of Dr. Charles Wilson, Vice-Chancellor of Leicester University and a member of the Sussex Academic Planning Board, including Mr. Noel Annan, Provost of King's College, Cambridge (now Lord Annan, and Provost of University College, London), and Professor Sir Solly Zuckerman, one of the leading scientific advisers to the wartime and later Governments. It nominated as Vice-Chancellor Mr. Frank Thistlethwaite, Fellow of St. John's College, Cambridge, a well-known historian of the USA. By building a prefabricated "University Village" the opening was brought forward from 1965 to October 1963, when 113 students were admitted.**

Essex is the one successful competitor which did not make an application during the post-war expansion. The project began with a resolution in the County Council in July 1959, which led to the setting up of a Promotion Committee under the chairmanship of the Lord-Lieutenant, Sir John Ruggles-Brise (later Pro-Chancellor of the University). The application submitted in May 1960 was approved by the UGC a year later. The Academic Planning Board, with Mr. Noel Annan of the East Anglia Board in the chair, nominated as Vice-Chancellor Mr. A.E. Sloman, Professor of Spanish at Liverpool University, and Mr. R.A. (later Lord) Butler, Home Secretary and Deputy Prime Minister, as Chancellor. The University received a good deal of advance publicity when its Vice-Chancellor was asked by the BBC to broadcast the Reith Lectures for 1963 on *A University in the Making*,*** which caused considerable stir by talking in terms, then unusual in Britain, of planning for a university of 10,000 or even 20,000 students. In fact, the immediate target was the

* Lord James of Rusholme, 'The University of York', in M.G. Ross, ed., *op. cit.*, pp. 32–52.

** Frank Thistlethwaite, *op. cit.*, in *ibid.*, pp. 53–68.

*** Published by the BBC, 1964.

usual 3,000 within ten years, which Essex has meticulously kept to so far. The University opened with 122 students in October 1964.

The establishment of the University of Kent at Canterbury was formally approved at the same time as Essex, in May 1961, after the post-war project was revived by the County Council and a group of local sponsors in 1959. The Academic Planning Board was under the chairmanship of Dr. D.G. Christopherson, by now Vice-Chancellor of Durham University and a member of the Sussex Academic Planning Board. It nominated as Vice-Chancellor Dr. Geoffrey Templeman, Registrar of Birmingham University – the first such appointment of a professional university administrator – which may account for the air of somewhat authoritarian efficiency which pervades the Kent campus. Speed – of planning, design, contracting and building – was the watchword at Canterbury, and anyone who stood in the way, from the humblest sub-contractor to the eminent consulting architect, found his services discontinued. It would perhaps be unkind to suggest that this did not result in any noticeable acceleration of the opening date, which came a year later than Essex and Lancaster, approved at the same time and six months later respectively, since this was due to the lack of suitable temporary accommodation. The University opened on its permanent site in October 1965, with the large initial intake of 458 students.*

The University of Warwick was also announced at the same time as Essex and Kent, in May 1961. The City of Coventry, target of Hitler's most famous "Baedeker raid", included a university amongst its plans for post-war reconstruction. The proposal was revived in 1959, and gained the support of Warwickshire County Council which, as we have seen, gave half the site. The name therefore refers to the county rather than the county town of Warwick, seven miles away. The proposal was also munificently supported by local industry, especially the motor industry, notably in the person of the chairman and vice-chairman of the Promotion Committee, the late Lord Rootes of Rootes Motors and Sir Arnold Hall of Bristol-Siddeley. The Academic Planning Board, chaired by Dr. E.T. Williams, Fellow of Balliol College, Oxford, and Editor of the Dictionary of National Biography, nominated Mr. John Butterworth, Bursar and Fellow of New College, Oxford, as Vice-Chancellor, and Viscount Radcliffe, the well-known judge and chairman of several Government Committees, as Chancellor. The University admitted a small number of post-graduate students in 1964, but the real opening came in October 1965, when 436 students were admitted.**

Lancaster was the last New University scheduled in England, in November 1961. It was the result of a hotly fought contest for the remaining prize which, since all the rest except York had been allocated to the southern half of England, the UGC had decided to award to the north-west. It became a competition mainly between Lancashire and Cheshire County Councils and, within Lancashire, between Blackpool and Lancaster. Both the latter places had ample supplies of seaside lodgings available for most of the year (the second in Morecambe, four miles away), but the ancient county town had more historic associations and lovelier surrounding countryside within sight of the Lake District mountains, and was likely to prove more attractive to academic staff. The UGC Sub-committee therefore recommended Lancaster. Although the last to be designated, it was by no means the last to open. The Academic Planning Board, chaired by Sir Noel Hall, Principal of Brasenose College, Oxford, and a member of the Kent Academic Planning Board, selected as Vice-Chancellor Professor Charles Carter of Manchester University, an energetic business economist interested in speed, efficiency and productivity. By acquiring and converting an old furniture factory in the city he was able to open the doors to 338 students in October 1964, two years ahead of schedule.*

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* G. Templeman, *First Report of the Vice-Chancellor of the University of Kent at Canterbury* (June 1966).

** J.B. Butterworth, *Report of the Vice-Chancellor of the University of Warwick, 1965–66.*

The University of Stirling is the only New University that owes its existence to the Robbins Report, which recommended that six additional ones should be created, including one in Scotland. With Government encouragement the UGC Sub-committee set out to choose between the eight places in Scotland which put forward proposals, and concluded in favour of Stirling, an ancient seat of government and a previous applicant in 1946, which was approved by the Government on 17 July 1964. One of the most important factors in the decision was the magnificent site, owned by the Scottish Office of the Government and formally donated to the University in 1965 — the first time that the central Government had given the land as well as the capital for buildings. Stirling was in effect the product of a Scottish national rather than a local movement, a fact which also expressed itself in the nationwide support for its appeal fund, which rapidly topped £2 million. Its Academic Planning Board was chaired by Lord Murray of Newhaven, the man who as chairman of the UGC, now just retired, had been most responsible for the establishment of the New Universities, and they nominated as Chancellor Lord Robbins, whose Committee's Report had been most responsible for the creation of Stirling. The Board took the unprecedented step of advertising the post of Vice-Chancellor and Principal (in the Scottish tradition of dual nomenclaure), and out of nearly ninety applicants selected in June 1965 Professor T.L. Cottrell, a young chemist from Edinburgh University, where he had made his name as a pioneer of new teaching methods. They also nominated as Secretary/Registrar the Deputy Secretary of the Scottish Education Departments, Mr. H.H. Donnelly, who had served as an official assessor to the Robbins Committee and found the prospect of helping to found a New University an exciting change from the civil service. The University opened in September 1967 in a one-storey, prefabricated but permanent building, called Pathfoot after a lost village on the site, with 188 students.**

The "New University of Ulster"(as it calls itself in its first Prospectus) owes its foundation to the Lockwood Committee on Higher Education in Northern Ireland, set up in 1963 to do for that country what the Robbins Committee did for Britain. The Chairman, the late Sir John Lockwood, a former Vice-Chancellor of the University of London, and his colleagues were instructed by the Minister of Finance for Northern Ireland to

* *First Annual Report of the Vice-Chancellor of the University of Lancaster* (December 1965).

** University of Stirling, *Prospectus, 1968–1969*; and conversations with Mr. H.H. Donnelly.

> review the facilities for university and higher technical education in Northern Ireland having regard to the Report of the Robbins Committee, and to make recommendations.

They found that a total of 12,000 to 13,000 university places would be needed by 1980, and that, since there would be social, physical and economic disadvantages in accommodating more than about 7,000 students in Queen's University, Belfast, there was an urgent need for a second university to grow to between 5,000 and 6,000 by 1980. Since the Northern Irish Government is financially responsible for higher education and had no University Grants Committee (Queen's University, Belfast, dealing directly with the Department of Finance), the Lockwood Committee itself performed the function of receiving and adjudicating between applications for the siting of the university from the Armagh, Londonderry and Coleraine areas. The main considerations were a large and suitable site in an area attractive for staff to live in, a sufficient supply of students' lodgings, adequate financial and other support, and appropriate industrial, including research, activities. It also had to have adequate communications with Britain and with Belfast, but to be far enough away from the latter not to be drawn into a parasitic commuter relationship with what was already one of the most congested conurbations in the United Kingdom, containing about a third of Northern Ireland's population of one and a half million. This ruled out the New City of Armagh, which was meant to relieve the congestion of the Belfast region. Londonderry, the second city, with a population of about 55,000 would seem to have been the obvious choice, for it already had the Presbyterian Magee University College, founded in 1865. But Magee was a very small college without power to confer its own degrees, its 245 students in 1963–64 mostly preparing to finish their courses at Trinity College, Dublin, and its 20-acre site was not suitable for expansion. In the Republic of Ireland to the south it is said, somewhat unkindly, that Londonderry is too Catholic in population and too near the border for the Stormont Government's taste. Be that as it may, the Lockwood Committee, chaired by an outsider, unanimously recommended the Coleraine area, on a beautiful stretch of the northern coast 55 miles from Belfast and, perhaps more important from the point of view of a university with contacts with the outside world, 41 miles from Aldergrove Airport, from whence all the major airports in Britain are within little more than an hour's flight. Magee College was to be closed down, and those of its staff who wished to do so to be transferred to the New University. (In fact, it has remained open as a sub-campus of the New University). The Coleraine Borough and Rural District Councils together with the Portrush and Portstewart Urban District Councils gave the 300-acre site on the banks of the River Bann. The Academic Planning Board was immediately set up, and nominated Dr. N.A. Burges, Professor of Botany and Pro-Vice-Chancellor, University of Liverpool, as Vice-Chancellor. A dozen new professors were appointed, in addition to the half-dozen transferred from Magee. The University opened doors to about 450 students in October 1968.*

More perhaps than any other New University, Ulster was created to meet the need for expansion beyond the capacity of existing institutions.

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* *Report of (Lockwood) Committee on Higher Education in Northern Ireland* (HMSO, Belfast, Cmnd. 475, 1965).

Yet even in this case the Lockwood Committee stressed the need and opportunity for educational experiment. In particular it suggested that Northern Ireland's potentialities in agriculture, forestry and fishing could be fostered by an emphasis on the biological sciences, and its demand for and export of teachers by a special interest in education. Thus it may be said that in Ulster as in every other case, the New University was created not only to meet the need for expansion but also with a special interest in and concern for educational innovation and experiment.

Part Two

PROBLEMS OF INNOVATION

I

THE PRESSURE OF NUMBERS

The primary and immediate reason for the founding of all the New Universities save Keele, as we have seen, was the need for the expansion of student numbers. The problem of how to cope with expanding numbers was therefore one of their first concerns. Indeed, one of their chief innovations within British university experience was their collective decision to break away from the tradition of the small foundation planned to grow slowly. This decision, to grow rapidly from the start so as to reach a "minimum viable size" of at least 3,000 students within ten years, was, in the words of Lord Fulton, one of the men most responsible for it, "a startling proposal", taken quite deliberately to get away from the old association of newness with smallness and slow growth, and for three reasons, all connected with the need for healthy expansion:

> First, the urgency of the need for more places without delay; second, the consciousness that, unless a sizeable contribution was made at an early stage to the national need for more university places, it would have been better not to divert from the existing universities scarce resources of capital and teaching manpower to small institutions where they would be less economically deployed; third, the realization that the prospect of slow growth offered little or no inducement for able and experimentally-minded academics to throw in their lot with the new institution.

In amplification of this last point, "the tradition of inferiority of which new institutions has been the victims in the past... had scared off staff of the highest ability from offering their services at the beginning, and it was usually nearly half a century before the consequences of this start could be overcome." In other words,

> to invite distinguished men to plan for a large-scale ten-year growth, at the end of which one great stage at least would have been accomplished, is one thing; it would be quite another to invite them to give up a decade of their working lives at the time of their highest scholarly productivity in order to achieve an almost imperceptible measure of progress. The good fortune of the new universities was to be born under conditions when it was open to them to make the right sort of offer.*

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* Sir John Fulton, 'The University of Sussex', in M.G. Ross, *New Universities in the Modern World* (1966), pp. 20–1.

Keele is the exception which proves this rule. Planned like its predecessors on a small scale as a college for 600 students, it did not reach even this figure until 1956-57, its seventh year of existence, nor its more ambitious original target of 800, cut back by the UGC, until 1961-62. In 1967-68 after eighteen years it still had only 1,681 students, not much more than half the "minimum viable size" of a later New University after ten years. It has now revised its plans, to reach 2,150 students by 1972, and 3,000 thereafter.

Several of the New Universities of the 1960's aimed, in the long term at least, at much more ambitious targets. The Academic Planning Board of the University of Essex set the fashion for very large figures (by British standards) when it planned for 6,000 students within twenty years and envisaged an ultimate student population of 10,000 or even 20,000.* The development plans for York and East Anglia envisaged a university of 6,000 students. Lancaster plans to accommodate 7,000 students on the existing site, and 10,000 or more when it is extended across the M6 motorway. The Warwick development scheme provides ultimately for 15,000 or 20,000 students. The target of the New University of Ulster was set for it by the Lockwood Committee at between 5,000 and 6,000 students by 1980.**

In the short term, however, all the New Universities have kept very close in their initial plans to the recommended target of 3,000 students within the first decade of opening. The original planning figures are summarized in Table 1.

Table 1. PROPOSED STUDENT NUMBERS IN FIRST TEN YEARS

	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	Tenth Year
Sussex	50	400	750	1,100	1,300	1,700	3,000
York	–	–	225	430	730	1,070	3,200
East Anglia .	–	–	112	395	735	1,225	3,000
Essex	–	–	–	100	300	600	3,000
Kent	–	–	–	–	300	700	3,000
Warwick	–	–	–	–	310	670	3,000 [1]
Lancaster	–	–	–	200	400	600	3,000
Stirling	–	–	–	–	–	–	3,000
Ulster	–	–	–	–	–	–	(4,500) [2]

1. By 1972.
2. The New University of Ulster, which opened to about 450 students in October 1968, plans to have 3,000 students, plus 500 in the Education Centre, by 1973 and 5,000, plus 1,000 in the Education Centre, by 1980.

Sources: UGC, *University Development, 1957–62* (HMSO, London, Cmnd. 2267, 1964), p. 103, and New University Development Plans, Vice-Chancellors' Reports, etc.

In practice, the actual growth of the New Universities has been somewhat faster than that planned, as is shown in Table 2 (which omits part-time students).

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* A.E. Sloman, *A University in the Making* (BBC, 1964), p. 9.

** *Lockwood Report*, p. 67.

Table 2. ACTUAL NUMBERS OF FULL-TIME STUDENTS, 1961-68

	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
Sussex	52	434	885	1,482	2,090	2,763	3,243
York	–	–	220	504	994	1,348	1,676
East Anglia ..	–	–	115	426	800	1,216	1,763
Essex	–	–	–	118	391	751	1,147
Kent	–	–	–	–	454	1,004	1,609
Warwick	–	–	–	–	425	906	1,332
Lancaster	–	–	–	327	761	1,176	1,419
Stirling	–	–	–	–	–	–	188

Sources: UGC, *Annual Survey, 1965-66, and Review of University Development, 1962-63 to 1965-66* (HMSO, London, Cmnd. 3192, 1967), as corrected by later figures kindly supplied, along with provisional figures for 1967-68, by Mr. R.C. Griffiths, Deputy Secretary of the UGC.

It will be seen that almost all the New Universities have moved well ahead of their initial target figures, and that, in particular, Sussex has already, in its seventh year, overtaken its long-term target. They are thus making a somewhat larger contribution to the expansion of student numbers than had been expected. On the other hand, their combined total number of students in 1967-68, 12,377, is only 6.3% of the university students in Great Britain, or slightly less than one-fifth of the expansion between 1962-63 and 1967-68 recommended by Robbins (and substantially achieved in practice) — a modest enough contribution, if an increasingly significant one.

As yet, with the exception of Sussex, which has leapt to the average size of British universities outside London, they are small universities. Hence, leaving aside the special problems of coping with any new influx of students in new buildings on a new site — problems which are by definition temporary and of limited interest — the problem of coping with numbers is not as yet specially difficult. But as we have seen all the New Universities are ambitious to become large, and they are well aware that growth will bring the usual problems of size, and are accordingly making plans to deal with them. The problems fall into three main categories:

1. the problems of social and academic organisation, or of so structuring the university that the individual student (or, for that matter, member of staff) is not lost in a vast, impersonal, amorphous mass, but has some sense of belonging to and effectively participating in an integrated, cohesive community of creative work and leisure;

2. the problems of providing residential accommodation for the large majority of students who cannot live at home;

3. the much larger problems of physically accommodating all the manifold activities, of teaching, research and recreation, which make up the life of a university, and of creating an efficient, stimulating and enjoyable environment in which to house them.

i) *Structuring for Growth*

Concerning the first category of problems, there have in Britain been two major and distinct traditions of university organisation, with very different implications for growth. The first may be called the Oxbridge or collegiate tradition, in which the university consists of a federation of smaller units, for social, residential and, to a large extent, for teaching purposes. This type of organisation, although shunned by most of the foundations of the nineteenth and twentieth centuries as too expensive, has many social and academic advantages, notably in the cohesion and sense of community of the college members, senior and junior. From the point of view of expansion it has the inestimable advantage of allowing for cellular growth by adding new colleges, the easiest and least disturbing form of growth. The older universities are still growing by this means, with the recent foundation of Nuffield, St. Antony's and Wolfson Colleges at Oxford and Churchill and Fitzwilliam Colleges and New Hall at Cambridge. The other major tradition of organisation may be called the Scottish, English civic, or monolithic system, in which (apart from St. Andrews and Durham where colleges play a part, though not so large a one as at Oxford and Cambridge), the university is a single unit, divided only for academic purposes into departments and faculties. This system, which operates equally in the separate colleges of the Universities of London and Wales, has the advantage of cheapness and the avoidance of reduplication in teaching appointments, but has the disadvantage of allowing for only one kind of growth, the enlargement of the single unit, with all the strains and tensions and loss of cohesion which that brings. This system, which was the normal one in Scotland as on the Continent, was adopted by most of the new English and Welsh foundations of the last 140 years, since it was both cheap and appropriate to the small institutions which most of them were at the start and were expected to remain.

This was still true when Keele was founded in 1950, and in a small college of 600 students there was no need to consider any other than the unitary model. Yet even Keele, by 1963, when it had fewer than 900 students, was already beginning to feel the need for some less amorphous and more flexible system. Having already decided in 1958 to develop its residences into mixed halls of about 400 under-graduates, each with its own refectory, it now set up a committee on the wider implications of this for the university's organisation, which recommended that every member of the university, staff and students alike, should become a member of a hall. In addition to the two Wardens, one for men and one for women, each hall should have a Chairman and Secretary elected by an annual meeting of all members, and a system of committees for tutorial, welfare and discipline, refectory and other social purposes. Although this scheme has not been carried out, it is an interesting anticipation of some of the methods of breaking down the undifferentiated mass of the university into smaller, more cohesive, social units which have been adopted at several of the later New Universities.

Since all the New Universities of the 1960's have been founded with rapid growth to a substantial size in mind, they have all had to face up to the implications of large-scale organisation in their plans for development. With few exceptions they have tried to avoid the problems and errors of the traditional provincial unitary university, though for different reasons and with different solutions. The main division has been between those whose primary concern was to avoid the more rigid academic organisation of the civic tradition, with its watertight faculties and departments, and those who put more emphasis on avoiding the lack of social cohesion, staff-student contact and sense of community in the large unitary universities. The first tended to adopt a version of the schools of studies, that is, loose, flexible and sometimes overlapping groupings of subjects, which cut across the departmentalism of the old academic structure. The second adopted a collegiate social structure, in which every student, and in most cases every member of the academic staff, belongs to an exclusive college or hall. The latter is not meant in any sense to be an imitation of the Oxbridge college, since it has no separate endowment, no right of appointment of academic staff or of selection of students, and no teaching function independent of that of the university. It is merely a social grouping of staff and students based on a building which is an integral part of the university and, in addition to common rooms and refectory, contains university teaching accommodation.

There is in theory no reason why these two modes of organisation should not co-exist in the same institution, and, indeed, the original report of the Academic Planning Board for Kent proposed both schools and colleges. But in practice, in spite of a compromise arrangement at Warwick where both the quasi-collegiate hall and the terminology of the school are in use, the two systems have tended to be mutually exclusive, the collegiate New Universities tending to be the more departmental in academic structure, and those operating the schools system eschewing the collegiate social structure. The detailed workings of these two systems will appear in their proper places, the schools system chiefly in Chapter III, below, concerned with the content and structure of academic studies, the collegiate system in Chapter V, concerned with organisational structure. Meanwhile, we are interested in this section in the two systems only as methods of structuring the university for the purpose of coping with large numbers of students.

The system of schools of studies is one of the main contributions of the University of Sussex to the development of British higher education. It seems to have grown out of the concern of the original Promotion Committee, prompted by the Local Authority Education Officers, especially Mr. Stone, to avoid the narrowness and excessive specialization of the single-subject honours course in favour of more general ones, such as "a school of politics and administration linked with history and philosophy, economics and psychology (resembling in some respect PPE at Oxford); and a school of European Studies, concerned not only with languages but with other aspects of civilization." This approach, which we have seen was a general one amongst university reformers at the time, was taken up by the Academic Planning Board and developed, with the enthusiastic support of the new Vice-Chancellor and the first Deans-elect and Professors, into four initial Schools, of English and American Studies, Social Studies, Physical Sciences, and Biological Sciences, to which were added in due course Schools of Educational Studies, Applied Sciences, and African and Asian Studies. Each School was meant to provide not only the academic but to a large extent the social environment for the students enrolled in it. Academically, whatever their intended specialist or "core" subject, they share common or "contextual" subjects, such as "The Modern European Mind" both in European and in English and American Studies, or "The Properties of Matter" common to all four science schools. Socially, welfare and discipline and the appointment of personal tutors are matters for the School, and ultimately the responsibility of the Dean, while student activities below the level of the Students' Union, such as internally competitive sports, tended to coagulate around the Schools. This structure, it will be noticed, is not so comprehensive or exclusive as the collegiate system. The student's allegiance to his School is not very different from that to the Faculty and/or Department in a traditional unitary university, while his main loyalty for social and recreational purposes is to the one big Students' Union (and its offshoot, the Athletic Union) of the traditional kind, with its progressive loss of contact and cohesion as the university gets larger. The member of staff may have even less firm anchorage in this structure. Without the firm attachment to a single-subject department which — for better or worse, for the support of like-minded colleagues or the domination of a professorial head of department — characterized the unitary tradition, he will now belong either, as generally on the science side, to a single, large, amorphous "super-department" (as one Sussex science Dean described it), or as is common on the arts side, at one and the same time to two, three or even more overlapping Schools. A historian or a philosopher can belong simultaneously to the Schools of African and Asian, English and American, Educational, European and Social Studies. Some of the younger lecturers, especially, complain that they feel somewhat lost and isolated in this system. At the same time the system puts a heavy burden of both academic and social, especially discriplinary, responsibility on the Dean, who was described by the same science Dean as "a super-head of a super-department". Symptomatic of this was our experience of conversations with Deans of Schools in Sussex and elsewhere, which tended to be continually interrupted by telephone calls and visits from members of staff, professorial and non-professorial, seeking interviews or decisions on what appeared to be comparatively minor points of administration.

The schools structure has been adopted, with only slight modifications, at East Anglia, Essex, Ulster and, to an extent which appears to be meaningful chiefly on the science side, at Warwick. The main difference between Sussex and the rest, if there is one, would seem to be that elsewhere the schools appear to be somewhat more mutually exclusive and independent. In East Anglia, for example, while the Schools of European and of English and American Studies overlap considerably in their preliminary programmes, they do not have much contact or overlap with the School of Social Studies. In Essex the Schools are divided into Departments, and it is significant that different courses in, for example, sociology, with different teachers, are mounted for students in the Schools of Comparative and of Social Studies. The failure of the schools system to solve the problems of social organisation in a large community are nowhere better seen than in the continued existence in all three institutions of the one big Students' Union or its equivalent, with the consequent concentration of all power and responsibility in student affairs upon a handful of students increasingly remote from the bulk of their constituents, and in the necessity of appointing in all three a Dean of Students or his equivalent, an overburdened academic officer who becomes the main channel for communication between staff and students, and on whose personality, goodwill, tact and skill in human relations the whole spirit and harmony of the community comes to depend. A system which relies for its health and viability on the almost superhuman qualities of a handful of student officers and a handful of deans of schools under a "super-dean" of students can hardly be said to have discovered the secret of how to organise a large university. Their senior staffs, of course, deny this, and look to the flexibility of their organisation to adapt to the needs of growth and change.

The collegiate system adopted at York, Lancaster and Kent, and in a modified form at Warwick, goes a long way towards solving this problem by the simple principle of devolution. In the first three every member of staff as well as every student belongs to a college, which becomes the main centre of his social and recreational life within the university. Each college has its own common rooms, bar and refectory, and its own residential accommodation for a proportion of the students and staff. Although all teaching is organised by the university through the academic departments, the college acts as host to teachers in non-laboratory subjects, in York and Lancaster to whole departments, but in Kent only to teaching members of the same college; The colleges vary in size, from about 300 students at York to about 600 at Kent, while at Lancaster colleges are being allowed to diverge from the average of 500, and one of them is choosing to aim at half that size. When the system is developed a proportion of the students, probably about half, will be residential, while the rest will live at home or in lodgings but will have a base in the college. In Lancaster this takes the form of a share in a study (with three other students), in which each non-resident will have a desk, chair and bookshelf of his own. The colleges are, in all non-academic affairs, self-governing, the staff and students each having their own governing bodies, which liaise through a system of joint committees. The heads of colleges, Provosts at York and Principals at Lancaster, are honorary, part-time and elected by the staff members, but at Kent the Masters are full-time University appointments, with the title and status of professors. The colleges are responsible for the welfare, disciplinary, and personal tutorial functions towards their students. The junior common rooms are the chief centres of student life, and the Student's Representative Council or its equivalent is not the one big Union of the unitary tradition but merely a convenient meeting place and organising centre for those student affairs which transcend the college level, such as university-wide social functions and (through the attached Athletic Union) inter-university sports.

At Warwick a compromise between the two systems has been adopted. Academic subjects are organised by so-called schools, some of which, like the School of Molecular Sciences, are broad-spectrum schools on the Sussex pattern, while others, like the Schools of History and of Politics, even with the joint School of History and Politics, are scarcely distinguishable from the traditional, collaborating departments of the civic universities. On the social side every student belongs to a large hall of about 1,000 to 1,500 students, of whom between a third and a half will be resident in the adjacent blocks of study-bedrooms, grouped around a large "Social Building" with facilities for all staff and students, resident and non-resident, including dining rooms, snack-bars, common rooms, launderette, shops, bars, and lockers for the non-resident students. The hall seems to be chiefly a centre of student life, the welfare, disciplinary and personal tutorial functions devolving upon the Schools and their professorial heads.

The price of the collegiate system, though not in theory a necessary one, seems in practice to have been a more conservative academic structure.

York, Lancaster and Kent are the most unashamedly "departmental" of the New Universities in England, Kent also being the only one to use the term Faculty, while Lancaster has Departments which are grouped in Boards of Studies which are difficult to distinguish from the traditional Faculty. Warwick, true to its habit of compromise, is, in the words of more than one of the senior staff, "rather vaguely structured", with its Schools, most of whose members regard them as akin to traditional departments, grouped in two Boards of Studies, one for arts and one for science, which are too large and amorphous to control or revise their decisions.

Stirling has neither schools nor colleges. According to the Secretary/Registrar, "We try to keep the use of the word 'department' to a minimum. We want the university to be as lacking in lines of demarcation as possible." But in the absence of other lines of demarcation, and in the powerful Scottish tradition of strong professorial departments, it is, in the words of one of his senior staff, "basically a departmental system". Whether or not in time the Scottish New University will feel the need for revision of its organisation to meet the demands of more flexible growth, it seems for the moment not to have considered the problem.

Whether the school or the collegiate structure will prove the better instrument for coping with the problem of large numbers of students it is too early, and all the New Universities are too small, to determine. They will have to grow much larger than the "minimum viable size" of 3,000 students before the problem becomes as acute as it has become in Manchester, Edinburgh, Birmingham or Leeds, or even in some of the single-faculty London colleges, such as Imperial College or the School of Economics. All that can be said is that, if the benefits of the Oxbridge collegiate tradition can be gained without its excessive costs and wasteful reduplication, then the experience of Oxford and Cambridge, both very large universities by British standards with upwards of 10,000 students each, suggests that the collegiate structure offers the best hope of uniting the social cohesion of small units with the economies of large-scale academic organisation.

ii) *New Forms of Student Residence*

Meanwhile, the basic organisational structure of each New University necessarily affects the patterns of its provision for student residence and, most of all, of its general physical development. With regard to student residence, while the Oxbridge tradition of organisation was based on the assumption that most students would live in college, the Scottish and English civic was based on the assumption that most would live at home or in lodgings. The expansion of student numbers, together with the system of grants enabling students to go to any university however far from home,* has rendered these assumptions out of date, and has increased the proportion of students living away from home from 58 % in 1938–39 and 65 % in 1951–52 to 80 % in 1961–62. This development was welcomed by the universities and the UGC on educational grounds, since students living away from home were likely to broaden their experience and take more part in university life than those living at home. They also welcomed and encouraged the provision of more halls of residence, the traditional form of provision at non-collegiate universities, so as to provide every student who desired it with the opportunity, where possible, of enjoying at least one year of residential university life. We have also seen that the Robbins Committee recommended the special provision of capital for residential and other amenities in the non-collegiate universities to reduce the relative attractiveness of Oxford and Cambridge. Traditional halls of residence, however, with their full range of kitchens, dining rooms, common rooms, libraries, and the like, are expensive – over £1,800 per student place in 1962 – and in spite of putting considerable resources into them the universities were able to provide only some 17,500 additional residential places of all kinds between 1938-39 and 1961-62, and to increase the proportion of students living in university accommodation from 25% to only 28%. The expense and the effort for so small an achievement, especially as the supply of lodgings began to dry up in many existing university cities, naturally turned their minds to cheaper and more expansible alternatives. These included the purchase and conversion into bed-sitting rooms of large, old, family houses and the building of blocks of study-bedrooms without the full range of common facilities of the traditional hall of residence. One of the first universities to consider the latter scheme, based on American models, was Manchester, which in the late 1950's built a tower block of study-bedrooms for post-graduate students on top of its new central refectory, and in the early 1960's built a whole "student village", Owens Park at Fallowfield, a mile and a half from the University, to house 3,000 students in blocks of study-bedrooms grouped around a central refectory.

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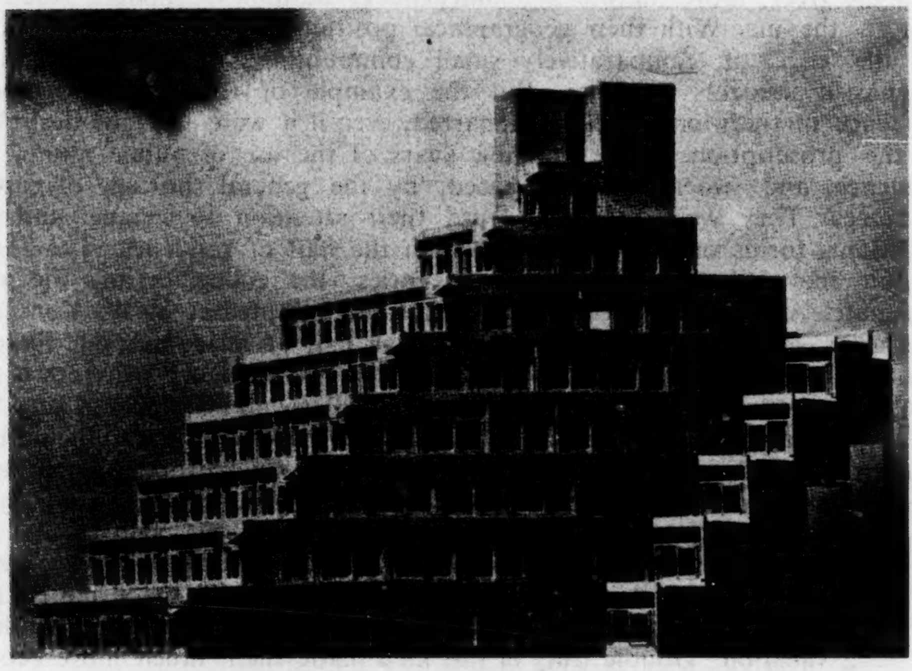
* Cf. *Grants to Students, Report of the Anderson Committee, 1958–60* (London, HMSO, Cmnd. 1051, 1960).

The New Universities of the 1960's came into existence just as this new and more flexible approach to student residence, more in keeping with the freer, more mature and independent outlook of modern students, was in the air. With their geographical position, on segregated campuses on the edge of comparatively small communities, they were bound to emphasize student residence. But the example of Keele, with complete residence in traditional halls, was barred, even if it were thought desirable, by the proscription in the first few years of the use of public money for residence, and when this was eased, by the general shortage of capital resources. They were forced to turn their attention to cheaper and less traditional forms of accommodation than the hall of residence. The forms chosen inevitably fall into two categories, the collegiate and the non-collegiate. At first sight, the collegiate solution adopted at York, Kent and Lancaster seems indistinguishable from the hall of residence, but there is this essential difference that, while the hall of residence provides a full range of common facilities for a very small group of students who use them only at night, the common facilities of the college are fully utilized round the clock not only by the residents but by the non-resident staff and students who teach, study, meet, eat and generally move and have their being there by day. The Vice-Chancellor of Kent claimed that the colleges were as intensively used day and night, weekdays and weekends, in term and out, as an ocean liner, so that they had to be closed and "dry-docked" for routine maintenance and decoration for one month in the long vacation. Double duty of this kind made them much more economical both to build and to run than separate residential and academic accommodation, and it was economic reasoning which persuaded the

UGC to sanction them at a time when it still ostensibly did not provide for student residence for the New Universities.

The non-collegiate New Universities have the same advantage of having space on the site to provide for all the student accommodation which they can afford, and so can adopt forms of residence which make use of central refectories and other common facilities. Sussex has built four "Park Houses" of study-bedrooms, with shared kitchenettes and small television lounges but no other common or dining rooms, all within two minutes' walking distance of the new central refectory and common-room block used by all staff and students. (One of the Park Houses is temporarily used as office accommodation for the central administration.) Warwick, as we have seen, has its quasi-collegiate halls, or blocks of study-bedrooms surrounding a "social building" with full common facilities for all staff and students. Because of the shortage of lodgings in the neighbourhood it has also acquired and converted five "Student Houses" providing furnished bed-sitting rooms and breakfast, in Coventry, Kenilworth and Leamington Spa. The most interesting experiments in non-collegiate residence are being made at Essex and East Anglia. At Essex tower-blocks of a cheap, frameless, cellular, brick "egg-box" construction, with "flats" on each of fourteen floors, are being built within a short walk of the teaching complex and central refectory. Except for the top two which are reserved for academic staff and post-graduate students, each floor or flat provides study-bedrooms for eight residential students and studies, shared in fours, for about twenty non-residential students – similar to the shared studies in the Lancaster colleges. The studies and study-bedrooms are grouped around a central kitchenette and dining space which all the students may use as an



Typical residential block.

alternative to the refectory. In East Anglia study-bedrooms have been built in groups of twelve, with similar cooking and eating facilities, on separate floors of their "ziggurats", or stepped-pyramidal residences, ranging down the hillside below the serpentine teaching block. Stirling and Ulster will also have student residences on the campus, within walking distance of the central academic and social facilities, but the form these will take is not yet clear. The first report of the Stirling Academic Planning Board talked of following the examples of York and of Aberdeen's Crombie Hall, but whether this means a college system or the traditional hall of residence or something between the two, remains to be seen.

Both the college system of residence and the non-collegiate alternatives of on-campus blocks of study-bedrooms using central common facilities have substantial advantages over the traditional hall of residence at some distance from the university. The advantages are on the one side social and educational and on the other economic and administrative. In the first place, on-campus residence enables the New Universities to avoid what has become the bane of many of the civic universities, the use of the central university facilities in "business hours" only, leading to what has become known as the "nine till five university". After five o'clock both staff and students disperse to their homes, lodgings and halls of residence, and only those in the last continue in the evening and at weekends any semblance of university life. Since it is generally agreed that a large part of university education consists in the students educating each other in clubs, societies and informal activities including intellectual conversation, this further abbreviation of an already all-too-short university session and degree course represents a considerable qualitative and quantitative educational loss. The New Universities have deliberately set out to extend the student day and week to the fullest possible length, and on-campus residence is one of their devices for achieving this. Having a core of staff and students in residence means, secondly, that it becomes economically and administratively worth while to open refectories, common rooms and libraries in the evening and at weekends, which not only increases the intensity of their use and the productivity of the capital invested in them but also attracts non-residential staff and students to make use of them. This facilitates the other device which has been adopted by most if not all of them for creating a "round the clock university", the arrangement by which students in lodgings take only breakfast there and the rest of their meals at the university, thus enabling the non-residential students to obtain nearly all the benefits of residence. The contrast between the bright lights and humming activity of the New University campuses by night and the dimness and deadness of many of the civic universities is striking testimony to the innovation which this "round the clock" approach has already achieved.

Two other innovations in university residence ought to be mentioned here, the Sussex "guest house" scheme and the "Lancaster scheme" of building student accommodation without either public finance or private donations, but with investment capital borrowed at commercial rates from banks, insurance or investment companies. The Sussex scheme provides for nearly 1,000 students in boarding houses, guest houses and small hotels contracted exclusively during term time to the University. The idea of self-financing residence paid for out of students' rents, was only part of the originality of the Lancaster' scheme. Much more important was the brief to the architect, Mr. Haydn Smith, in the light of the fact that private housing cost, per head of the people housed, less than half the price of university residence per student-place, to design student accommodation on the same lines as low-rise private flats. This meant designing a simple, flexible unit of accommodation, consisting of four to six study-bedrooms around a core of kitchen, dining and toilet facilities, which could be arranged in various ways in three-storey blocks on shallow, house-type foundations. In this way it was possible to build detached, residential annexes to the third and later colleges at a cost of £700 per student (plus professional fees at eight and a half per cent), compared with £1,400 to £1,450 (plus professional fees at twelve and a half per cent) for conventional halls of residence. At this price the University could raise the cost on a thirty-year mortgage, again rather similarly to private housing, and repay the interest and capital out of rents which students could afford to pay. The first block of commercial residences, for Cartmel College, has just been built, and the scheme has not yet been put to the test of experience, but it has already aroused interest throughout the rest of the universities, and many of them, including several of the new ones, are taking steps to emylate Lancaster.

iii) *The Integrated Pedestrian Campus*

Student residence is only one aspect of the problem of accommodating large and growing student numbers. Much more important is the provision of the physical accommodation for the teaching, research, social and recreational functions of the university for all staff and students, resident and non-resident. We have already seen, in Part I, Chapter I, that all the New Universities have seized the opportunity presented by a virgin site to plan a comprehensive physical environment in which every university activity can find an integrated place, and all of them since Keele have made some attempt to segregate pedestrians and vehicular traffic. The result has been that the New Universities have become, along with one or two older civic universities which are redeveloping in slum-demolition areas and those ex-colleges of advanced technology which have moved out to new sites, the prototypes of what an American professional university architect-planner, Richard P. Dober, has called "the continuous teaching environment":

> The most striking synthesis [on the British campus development scene] is the continuous teaching environment, a physical form that preserves communication and contact between all parts of the institution while allowing external accretion and internal change.*

The term is not an ideal one, since teaching is only one of the many functions served by it, but the concept of a continuous physical environment in which all the facilities required for the manifold activities which go to make up university life, from teaching, research, reading and discussion to eating, sleeping, sports and pastimes, are provided for within walking distance of each other, and in a way which allows for easy and flexible growth and change, is in itself a major innovation. Like many other major innovations it is basically very simple. It is also a revival, in the modern context of large numbers, long distances and the motor car, of a very ancient and natural principle which was first adopted by the medieval collegiate universities when it was still possible to interweave the activities of a university with a tiny, and to all intents and purposes pedestrian, town. It is only the coming of large-scale urban living, and above all of the motor vehicle and its dispersion of human activities as well as its danger to life and mental peace, with has disrupted the old, natural solution and made urgent a new, artificial one. Rather than "continuous teaching environment" this man-made, comprehensive, physical matrix of the ideal university will here be called the integrated pedestrian campus.

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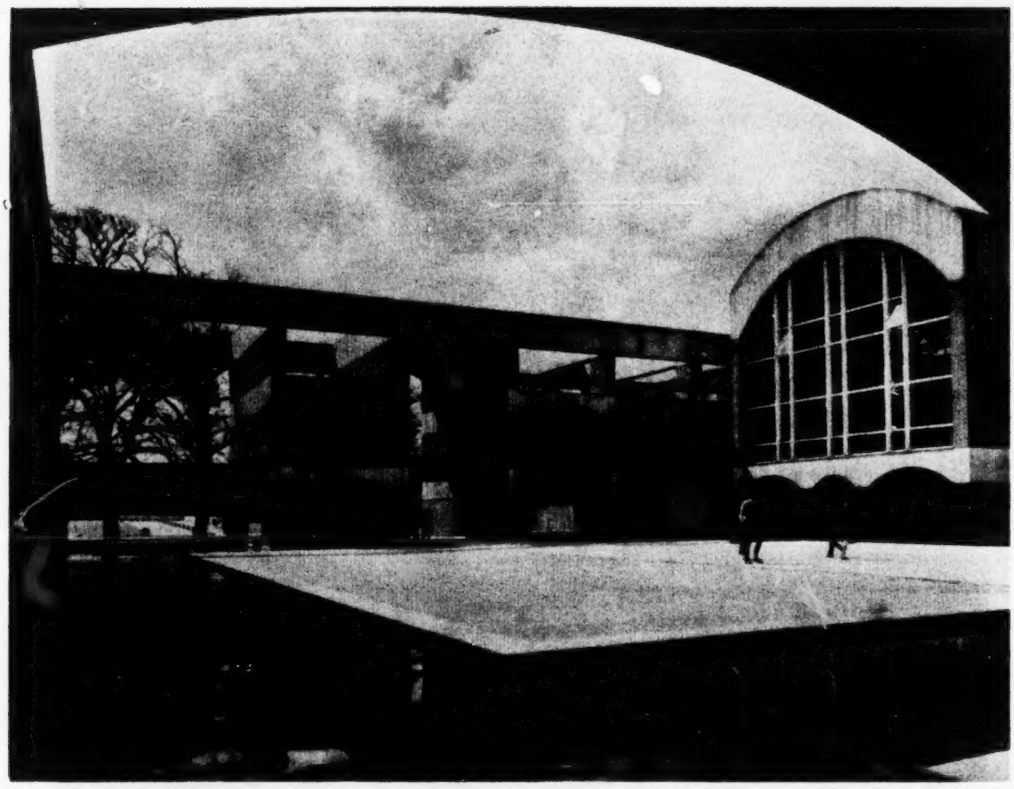
* Richard P. Dober, *The New Campus in Britain: Ideas of Consequence for the United States* (Educational Facilities Laboratories, New York, 1965), p. 9.

As with integrated student residence, which indeed is an essential part of the same concept, so with the integrated pedestrian campus, the New Universities came into being just when the new, or revived, idea was in the air. Various of the older universities were moving in their redevelopment schemes towards the continuous *teaching* environment. Birmingham University in its Development Plan of 1958 adopted the principle of the "street-deck", a pedestrian way maintaining the same level as the street entrance through a sequence of teaching buildings on falling ground, so that access was continuous, under cover, and with a minimum use of lifts and staircases. Cambridge University in its Sidgwick Avenue development in the early 1960's placed a sequence of science and social science buildings in a pedestrian "piazza". Leeds University's Development Plan, 1960-63, seized the opportunity of redeveloping an adjacent area of slum housing to create a complete pedestrian precinct with the core of central facility and administrative multistorey buildings stretched out along a sequence of terraced, paved courts, with the more specialized, mainly single-storey buildings existing on either side to the perimeter. The most ambitious of such schemes was that of the Manchester Education Precinct of 1964, covering a 280-acre segment of the city and including not only the University but its Institute of Science and Technology a mile and a quarter away and six other higher educational institutions as well as three teaching hospitals. All these and their internal buildings were to be joined by an upper-level system of pedestrian walks and spaces, forming a strong "spine" to the precinct. The plan envisages shops, restaurants, clinic, meeting rooms and so on, with study-bedrooms above as well as academic buildings, so that it goes beyond the continuous teaching environment to the integrated pedestrian campus itself. By 1964, however when the Manchester Precinct was still only an Interim Plan, the New Universities were in an advanced stage of planning, and, in several cases, of building, so we may say it was they who brought the idea out of the air and down to the ground.

All the New Universities were faced with a similar problem of physical development, that of providing within a large but finite virgin site of 200 or more acres all the material facilities and amenities of a university which would be tolerably attractive and comfortable for the first generation of two to four hundred students yet at the same time would allow for continuous and rapid growth to at least 3,000 students. Since in a modern British university the pay-roll staff, academic and ancillary, including administrators, technicians, secretaries, porters, cleaners, gardeners, maintenance workers, and so on, may be as many as one for every two students, the total population using the site will rise in ten years from a few hundred to 4,500 or more. And since this sizeable community will, by day at least, be cut off from close contact with the amenities of a town, it will necessarily have to provide facilities, such as restaurants, bars, coffee bars, shops, banks and, of course, car parking, which elsewhere could be taken for granted or left to private enterprise. It was the segregated virgin site and the need for rapid growth rather than the fashionable abstract idea which forced on the New Universities, as on the ex-colleges of advanced technology moving to similar sites, the concept of the flexible, integrated campus. They approached it in different ways, but certain common principles were thrust upon them all. First of all the symmetrical, monumental, neo-classical or other static model beloved of traditional civic universities, which implied a finished, balanced, permanent state, was out of the question. An asymmetrical, open-ended plan had to be adopted which, for those using it at any particular stage, was reasonably complete in itself, both aesthetically and functionally. This meant, secondly, that the development had to be physically continuous, with the first and most essential buildings in reasonable juxtaposition not only to each other but to the major routes of further growth. Thirdly, since no-one could foresee exactly how each function would develop, space had to be reserved even within the earliest and most central building complex for unexpected extensions, as well as for expected extensions of such functions as central administration and the library. Fourthly, in spite of the temptations offered by a large site, the urban complex had to be concentrated, both to keep down the walking times between buildings and to husband space for future development of unknown scale and use. Fifthly, within the urban complex central sites with fullest access had to be allocated to high-use functions such as the administrative, library, communal teaching and social functions, and the like, while low-use functions such as specialized teaching and research and residence had to be relegated to the periphery. Finally, though chronologically first in the process of planning, the whole development had to be fitted to the topography and personality of the site, using the lie of the land to best aesthetic and functional advantage. As the Vice-Chancellor of Essex put it, these exacting requirements could not be met by " some pavilions in the park ". They demanded an intelligent and logically thought-out plan.

The first attempt was necessarily that of Sussex. There the architect, Sir Basil Spence, set out to blend the aesthetic appearance of the traditional university quadrangle, derived from Robert Adam's eighteenth-century quad at Edinburgh, with the needs of the twentieth century by a series of eccentrically expanding squares. First he designed " College House ", now called Falmer House, a single building arranged around a quadrangle, to house all the academic, administrative and social activities of the first generation of students. Pedestrian access from the main road and railway station led straight into the quadrangle, and out the other side into the second stage, the " Great Court " or larger quadrangle of buildings, including the library, arts building and physics building of which Falmer House became one side as well as the " gate-house " framing the vista for the approaching visitor. From the pedestrian terraces and lawns of the Great Court gravel walks lead on to the later stages, the arts building extension, the other science buildings, the new refectory and common-room block, and the Park Houses for student residence. Vehicular access to the loading bays of the science blocks, the refectory and the Park Houses is by a perimeter road, which unfortunately has some buildings beyond it. One small sign of the failure to site this road properly so as to segregate pedestrians and traffic completely are the ramps on it

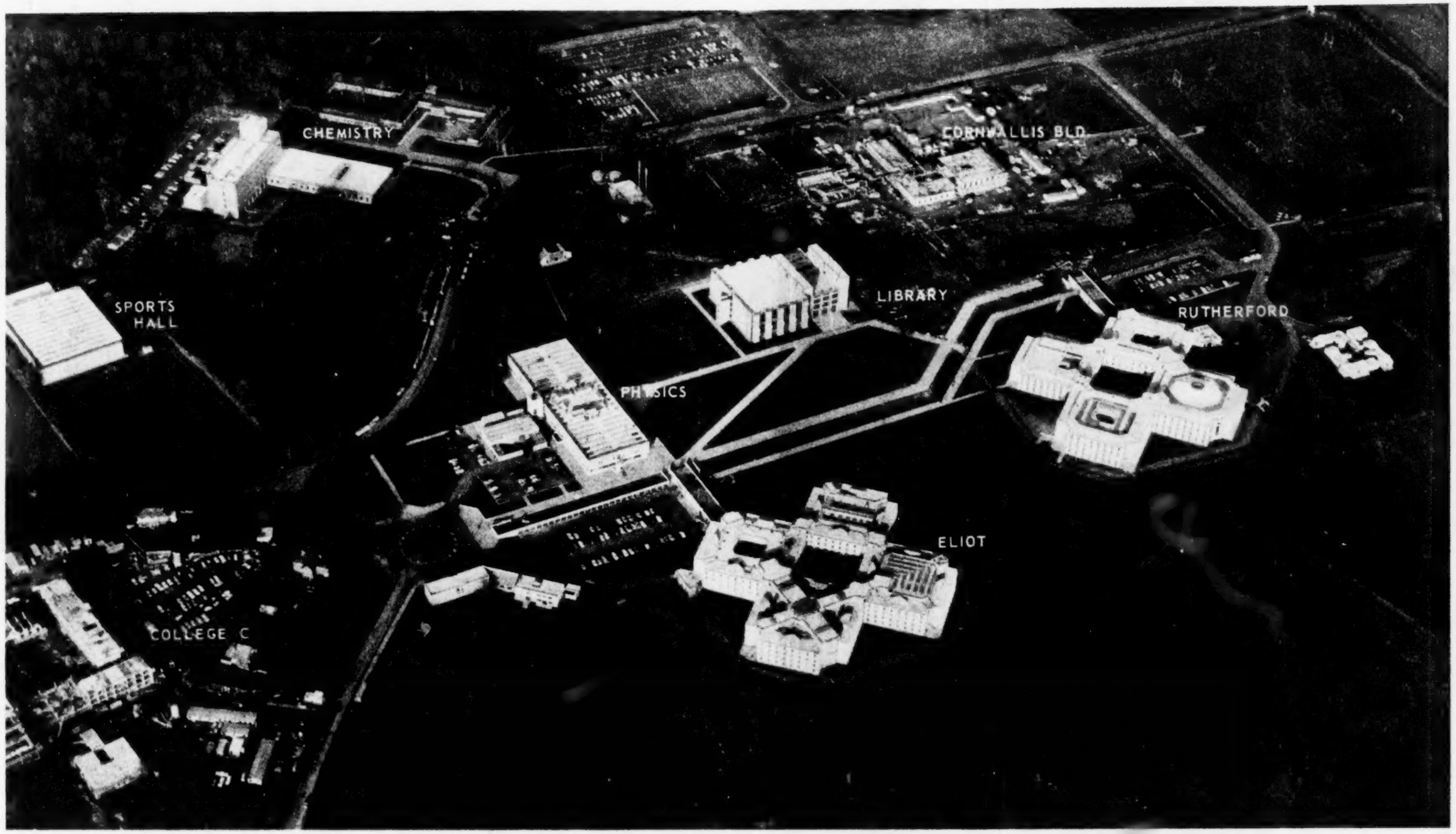


University of Sussex — Falmer House.

to slow down speeding vehicles. Apart from this and the lack of covered ways for pedestrians — which perhaps matters less in Brighton's climate than almost anywhere else in Britain — the Sussex campus is a functional as well as an aesthetic success for the university of over 3,000 students which it has now become, though it is not clear yet whether future development can follow without some logical discontinuity or drastic change in plan.

York was the first to adopt the collegiate plan of cellular growth, the prefabricated colleges and more specialized buildings being connected by covered pedestrian ways, with vehicular access by perimeter road. The site architects, Robert Matthew, Johnson-Marshall and Partners' plan, a concentric one with later buildings fanning out from the central core, does not altogether avoid the appearance of scattered pavilions in the park, and the network of free-standing covered walks are small protection from the horizontal rains of the Yorkshire winter. Above all, it avoids the worst feature of concentric development, the daily trudge through the mud and mess of current building work, only by the use of the rapid and clean method of prefabricated construction referred to below. The price of this, however, is a greyness and uniformity of appearance which is mitigated only by the pleasing and imaginative landscaping, especially the use of artificial water.

Kent has the same general character of scattered colleges and other buildings connected by pedestrian, though not covered, ways, adapted to a hill-top site overlooking the ancient city of Canterbury. Although

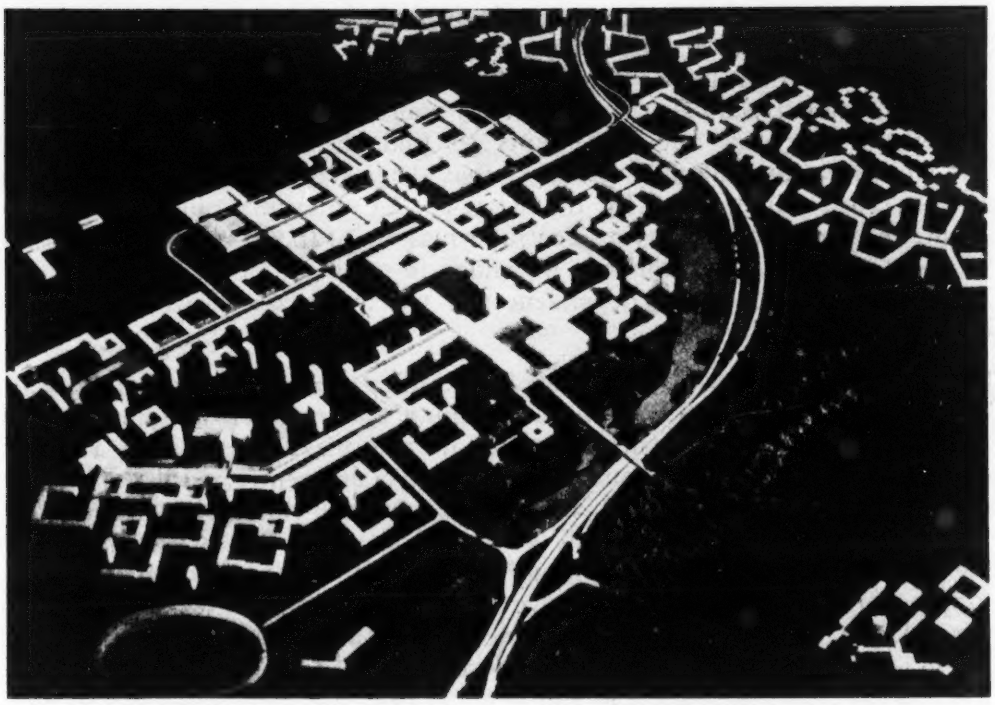


University of Kent at Canterbury.

opened last of the English New Universities, its style and plan are, if anything, retrogressive, betraying a nostalgia for the monumental and symmetrical. The first two colleges, Eliot and Rutherford, are maze-like in their convoluted geometry, so that each staircase and floor level has to be numbered to enable the inhabitants to find their way around. Some of the students said, unkindly perhaps, that they were not meant to be lived in but to be looked at by the citizens of Canterbury, and to look out from, through the magnifying central windows of their dining halls, at the gothic tower of the cathedral. Outside, in spite of the pedestrian walks, there seems an excessive dependence on narrow access roads, reminiscent of Keele.

East Anglia took the integrated pedestrian campus a long step forward by planning a literally continuous teaching and research building snaking gently along the hillside, in which the lower floors of one subject area run into the upper floors of another. The university centre, with the library, administration, assembly hall, dining and common-room block (University House), and small theatre, will be linked to it at the higher end, while the residential blocks or "ziggurats" mentioned above will be built on the slopes below and connected above ground and traffic level, internally by the interconnected corridors of the academic building and externally by an offset, elevated (but uncovered) pedestrian way. The conception, by the architects, Denys Lasdun and Partners, is fine, but the execution, in grey, shuttered concrete, already showing characteristic weather-drip stains, is less than impressive. The "ziggurat" residences, too, which hug the hillside at the rear wall as well as the floor of every pyramidal step, have given trouble with the damp-proofing. It is a pity that so imaginative a scheme should be marred in the execution. Its linear plan marked the first real break with the scattered-pavilions approach, and enabled the planners to solve at one blow the problem of combining current multi-functional use with continuous future growth. The solution was to "dimensionalize" the development along linear and lateral co-ordinates, that is, by stringing out the most important and heavily used facilities (administration, library, common rooms, and academic areas) alongside a longitudinal pedestrian "spine" which, being open-ended, could extend into the future, and appending to it at right angles the more specialized and exclusively used facilities, notably residence. In the East Anglian case the spine was effectively open only at one end, and the lateral co-ordinate only at one side, the lower hill-slopes, but the principle was intact and intelligently applied.

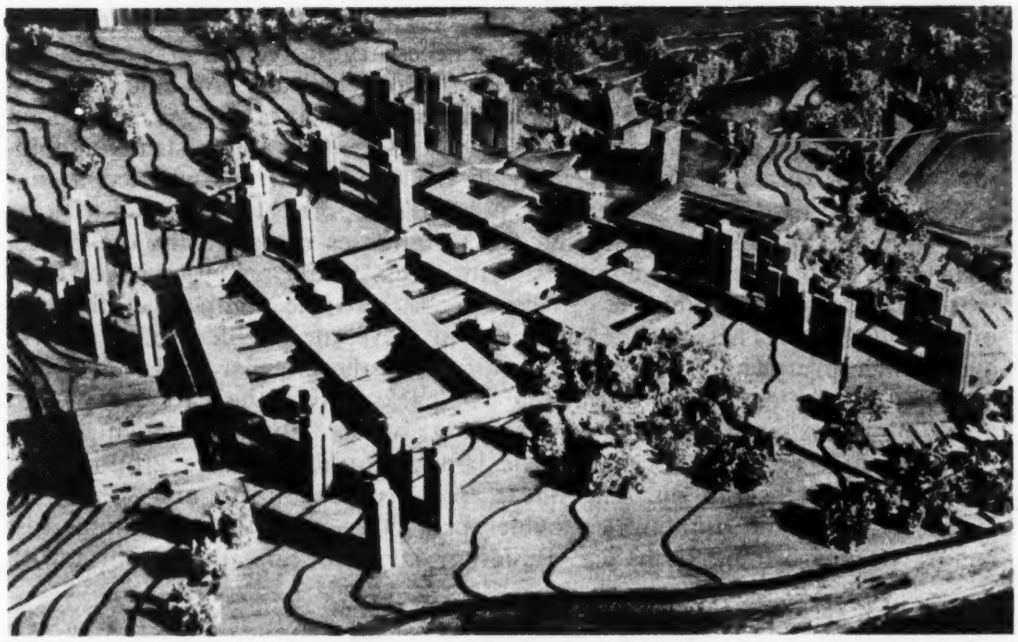
Warwick has had two development plans, the first, dated 1964, by the architects, Arthur Ling and A. Goodman, the second, dated 1966, by the firm of architects Yorke, Rosenberg, Mardall. The first was an elaborate plan which carried the linear principle as far as it would go. From a central pedestrian square, with car park and bus station underneath, three "arcades" or covered pedestrian ways would radiate like the spiralling arms of a galactic nebula. The arcades would lead to different subject areas — science, social science, arts — with teaching buildings interspersed with communal facilities, dining units, and residences, and on past the social buildings and blocks of study-bedrooms of the large Warwick halls. The University would expand longitudinally, along the line of the arcades, and laterally, by extension of particular subject areas outwards on each side of them. Specially large extensions or new subject areas could be



University of Warwick. At right, Campus Center
(*Model of plan at 15,000 student level*).

accommodated by starting new arcades from the "elbows" of the spirals. Perhaps because this plan was too elaborate and the huge, glassed-over arcades too expensive, the 1966 revised plan was a much more simplified version, with zones for central facilities, academic area (divided between science and arts), and residential, service and sports and recreational areas, connected by a double system of traffic roads and pedestrian ways. Everything is very tentative, on the grounds that future development cannot be foreseen in detail. For example, "the segregation of pedestrians from vehicular traffic as shown indicates a possible solution which might be found desirable in the fully developed university". The only sign of this on the ground so far is a footbridge over the road between the library and the first science building. The main circulation of the university still depends on the ancient, narrow country lane cutting across the site, and on narrow service roads, some without footpaths, somewhat reminiscent of Keele.

Essex is the most imaginative and futuristic version of the integrated pedestrian campus, with vertical as well as horizontal segregation. The architect, C.K. Capon of Architects' Co-partnership, London, has seized on the central feature of the park, a steep-sided valley, to provide a natural "underground" access to the urban complex, which is built around five "podia" or raised platforms at ascending levels twenty-five feet above the valley floor. Around these platforms or raised squares, are built the shops, coffee-bars, common rooms and other communal facilities, as well as the academic buildings. The last are in fact one continuous building, snaking back and forth across to the land on the shoulders of the valley so as to enclose the five squares as well as adjacent, terraced quadrangles on

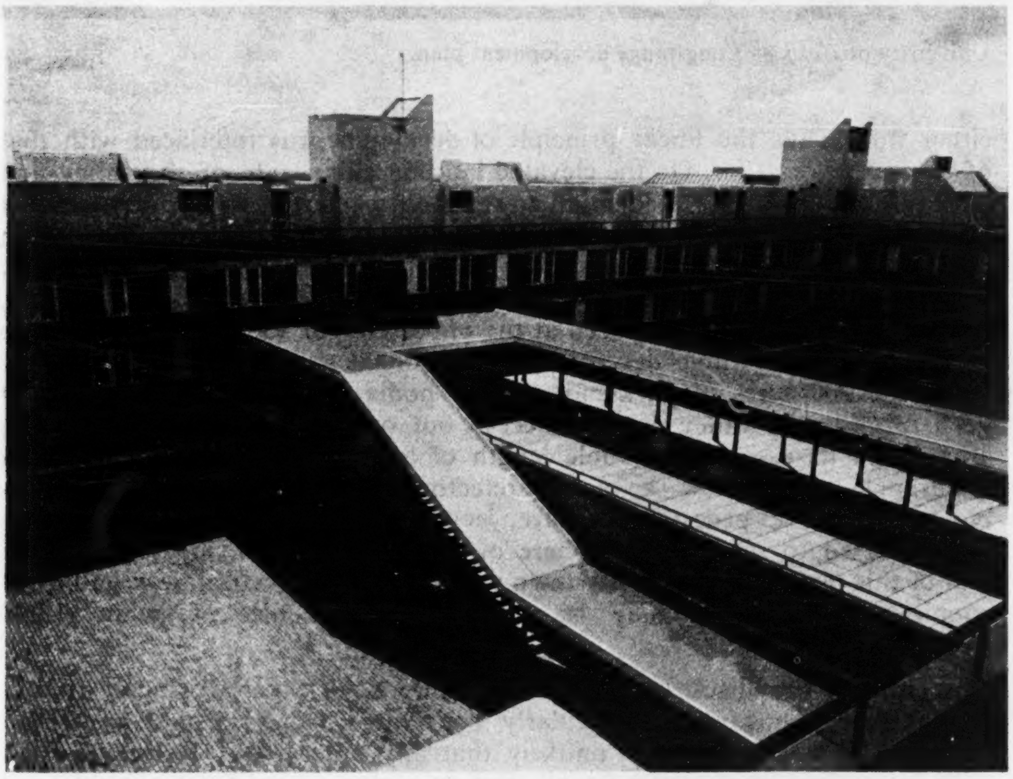


University of Essex — Long-range development plan.

either side. Thus the linear principle of development is interlaced with that of vertical segregation. On the elevated land on either side of the valley and its complex, rise the residential tower-blocks referred to above, within a few minutes' walk of the squares and of the refectories, which stand in the open arms of the continuous teaching building close to the podia. The library, administration and such communal facilities as creative arts, drama and music will be placed at the upper end of the complex, close to the lake, and the whole development for 10,000 students will occupy only 80 of the 200 acres of parkland. All five podia have been raised ahead of need to clear the valley road for access, but only one of them is built up, along with its associated double length of academic building and adjacent quadrangle, plus a new, hexagonal refectory and a small number of tower-blocks. The one pedestrian square, nevertheless, is sufficiently complete and enclosed to set the atmosphere of intimate, urban living which is the aim of this plan for a university town which, with its vertical segregation of people and transport, may be considered the Venice of the university world.

The one drawback to the Essex scheme is its expense which, without the natural bonus of a particularly convenient valley, would have been prohibitive. It is extremely unlikely that any other New University for a very long time ahead will be allowed to create an artificial ground level twenty-five feet in the air. This is therefore likely to make Lancaster the cheapest and most convenient model for future emulation. The Lancaster development plan, by the site architect, Gabriel Epstein of Bridgewater, Shepheard and Epstein, is an intelligent compromise between vertical and horizontal segregation, which wrings the fullest possible advantages from the linear principle. The colleges and other buildings of the university are built along a ground-level pedestrian "spine" which opens out here and there into squares with shops, banks, pubs, and other communal facilities.

The pedestrian way is half-covered by a cloister-like canopy jutting out from one of the adjacent buildings — a necessary protection in view of the wet climate of the north-west — and the "cloisters" are continued around the squares and around the inner quadrangles of the colleges. The main square, which has the library, bookshop and central administrative building, is built across a small declivity in the site which has enabled a tunnelled access road to be built for public transport, students and visitors thus arriving by bus and emerging from staircases directly into the pedestrian network. This road connects with access roads on either side, from which cul-de-sacs for motor vehicles probe into the complex at the rear of the buildings. These cul-de-sacs help to solve the problem of car parking, which everywhere else has been met by the expensive, wasteful and time-consuming device of perimeter car parks. Here the cars are parked at right angles to the road on asphalt strips or "aprons" which, unlike the car park with its internal traffic lanes, require no more ground than the cars actually stand on. The linear spine, running north and south and always close to the buildings, provides protection from the prevailing west winds straight off the Irish Sea. Building, having begun at the centre with direct access for the first generation of users by car and public transport, can now proceed along the spine both north and south without disturbing the central areas. At first, while the central section was still being built in the mud of two wet northern winters, this was hard to believe, but now the foresight of the plan is beginning to take effect and it can be seen to work. The plan can accommodate 3,500 students per quarter-mile of



Lancaster University — Bowland College (interior).

spine — 7,000 on the present site, or perhaps 10,500 if the whole of its length were devoted to the complex, which would still leave more than half the site for playing fields and landscaped woodland — so that no building need be more than a few minutes walk from any other. Meanwhile the colleges, which are finite buildings for fixed numbers of students and need no further extension, allow for cellular growth northwards and southwards, while in between and behind them the specialized academic buildings, notably in the sciences, and other facilities such as the library, the administrative block and the music, drama and creative arts centre, can expand east and west at right angles to the spine. Functionally, if not visually, Lancaster is the most successful example in practicable, easily imitated terms of the integrated pedestrian campus, which is the most important contribution made by the New Universities towards solving the problem of physically accommodating large and rapidly growing student numbers.

The newest universities, Stirling and Ulster are still too new to have made much impact with their development plans. Stirling's development plan is by the same site architects as York, and there is certainly a family resemblance, both in the prefabricated construction of the first multi-use building, and in the plan for a scatter of buildings around a lake linked by pedestrian ways. They are also the site-architects, however, for the new Technological University of Bath (the ex-Bristol College of Science and Technology), where the linear principle with lateral extensions has been adopted. It will be interesting to see whether the latter will have any sympathetic effect on developments at Stirling.

By way of postcript to this section on physical development, a word should be said about the only other physical innovation of note made in the New Universities. This is the minor and, outside universities, by no means novel, but potentially significant innovation of prefabricated construction. Sussex is built in traditional English brick, but on a frame of specially designed precast concrete elements, capped by a roofing system of precast concrete vaulting. So new was this method of construction in Britain that specially large telescopic cranes had to be imported from France to handle the prefabricated units. East Anglia is entirely built in concrete units, and a special "factory" was set up near the site to manufacture them. Several other New Universities have incorporated some elements of prefabrication, but the one most wholeheartedly committed to it so far is York, which has adopted the "CLASP" system of the Consortium of Local Authorities Special Programme, originally and successfully applied to the building of schools from 1958 onwards. The basic elements are light slab foundations supporting a light steel frame with timber roofs and floors, and a variety of (mostly grey or white) external claddings, all within a modular system based on a 40-inch horizontal and 24-inch vertical module. The great virtue of the system is its rapid and, above foundation level, completely dry construction, which has allowed York to beat all records in construction time and to preserve an extremely neat and clean site. The disadvantage of the system as noted above, is its drabness and uniformity, in spite of great efforts to vary the colour and texture of the modular panels. If prefabrication is to be widely imitated in university construction it must show itself more aesthetically versatile than at York.

II

EQUALITY OF OPPORTUNITY

Of the two kinds of educational equality, equality of opportunity and what the policy behind the 1944 Education Act called "parity of esteem" (equality of status and standards between the different types of education for children of different levels of ability), we in Britain have traditionally been more concerned, at least until recently, with the first. This is because the denial of educational opportunity to the talented amongst the underprivileged groups in society – the underprivileged social classes, the economically and educationally more backward areas of the country, and the less educated sex – is, quite apart from its social injustice, so obviously a waste of our most valuable resource and an economic and cultural loss to the whole community. It is also the easier and cheaper equality to pursue since, although individually more expensive, the numbers of the talented are by definition comparatively small and the aggregate cost of providing grammar school and university places for the few is much less than that of providing equal secondary education for all, and infinitely less than providing tertiary education for the bulk of the population. One might go further and say that it is also politically more attractive, since it offers social advancement to the intelligent and energetic who might otherwise become a source of political unrest and discontent.

For all these reasons, conscious or unconscious, successive British Governments since the legal establishment of State secondary education in 1902 and the provision of "scholarships" to the grammar schools from 1907 have paid more attention to equality of opportunity than to parity of esteem. Only in recent years, with the movement for comprehensive secondary schools (educating together children of the whole ability range from the same area, except the handicapped and educationally sub-normal), has the second kind of equality taken precedence at the school level, while at the higher level nothing like the American or Russian aim of educating 30 to 40% of the age group is considered possible. The hope of the Robbins Committee is that 17% will be admitted to full-time higher education by 1980, and although we are already running ahead of the Robbins timetable, with some 339,000 students in 1966-67 as against the forecast of 312,000, the British system is still frankly élitist, with only 13% in that year in higher education, less than half of them in the universities.* The university students are a true élite in the sense that they are selected chiefly by merit, as measured in the main by A-level performance in the GCE examination. There is as a general rule no conscious selection in British universities by social class, type of school, geographical area, or, except in the small and diminishing number of single-sex colleges, by sex. Nevertheless, because the whole British education system becomes progressively more unequal in its higher reaches, far more children from the higher social classes are admitted to universities than from the manual working class, more students from the prosperous areas of the country than from the so-called "grey" or less prosperous areas, and far more boys than girls.

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* *Robbins Report*, p. 273; *The Times*, 13 September 1967.

Upper middle-class children, besides monopolizing the private, fee-charging sector of education, have a 60% better chance of reaching the Grammar School than lower working-class children of the same ability, and, amongst those of high ability, a 50% better chance of staying at school after the age of 15.* Not surprisingly they have a far better chance of reaching the university, as Table 3, below, shows: whereas the middle class form about 22% of all households, children from them represented in 1958-59 62% of university students; conversely, while working-class families form about 66% of the total, working-class children represented only 27% of all students. What is perhaps even more surprising in view of the consciously equalitarian educational policy of the post-war period, the ratio of working-class to middle-class students has scarcely changed at all. Between 1928 and 1947, 8.9% of boys of 18 from the non-manual classes went to university compared with 1.4% of manual working-class boys, a ratio of 6.4: 1; in 1960 the corresponding percentages were 16.8 and 2.6, a ratio of 6.5 : 1.**

This persistent class difference was reinforced by the type of school attended. As Table 4, below, shows, children at Independent (private, fee-charging) schools formed in 1966 about 6% of all children at the compulsory school age of 14, but about 16% of those staying on in the sixth form; their share of university students (other than at Oxford and Cambridge where they had 51%) was 15%. Children at Direct Grant schools (highly selective day schools run by independent governing bodies but financed directly by the Department of Education and Science in return for at least 25% of "free" places for scholarship children paid for by the LEA) formed about 2.5% of 14-year olds, but 9% of sixth formers, and provided 12% of university students (other than at Oxford and Cambridge, where they had 17%). Children at maintained (State or, strictly, LEA) schools formed 83.5% of 14-year-olds and 74.8% of 17-year-olds, and provided 73% of university students (other than at Oxford and Cambridge, where they had only 32%). But most of the 17-year-olds and most of the university students were at or from the Maintained Grammar Schools where, as we have seen, the middle class took far more than their share of all places, and still more of the sixth-form places.

In spite of all this, Britain has a higher proportion of working-class university students than other Western European countries. As we saw in Part I, Chapter II, Section (ii) above, about 25% of British students are of working-class parentage, compared with 20% in Norway, 14% in Belgium, 8% in the Netherlands, and 5% in France and West Germany.* Perhaps the most significant point about this figure, however, is that it has certainly not risen and may be going down: in the late 1950's, according to the Robbins Report, it was 27%. The Robbins Committee was adamant about the principle of equality of opportunity:

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* Estimated from *Robbins Report, Appendix One*, pp. 49, 51.

** *Ibid., p. 54.*

> Throughout our Report we have assumed as an axiom that courses of higher education should be available for all those who are qualified by ability and attainment to pursue them.

They vindicated this belief on two grounds, the need in the interests of economic growth and higher cultural standards to make the most of the talents of all citizens, and the moral right of every citizen to develop his or her capacities to the full: "The good society desires equality of opportunity for its citizens to become not merely good producers but also good men and women." ** They were convinced that the so-called "pool of ability" was much larger than was being tapped by the universities or any other level of higher education, and that the untapped reserves were greatest amongst the poorer sections of the community, though also substantial in the middle class, amongst girls of all classes, and amongst all classes and both sexes in areas with comparatively few grammar school places.*** The Committee naturally expected a large increase in the flow from this pool of unused human capacity via the universities and other higher educational institutions into the service of the nation, and their Report has been widely hailed as the beginning of a new era of greater equality of opportunity. To some, such as Kingsley Amis, the university teacher turned comic novelist who coined the anti-Robbins slogan "More means worse", equality was already going too far, and expansion would inevitably mean the induction of inferior students into the universities. What perhaps had not been noticed were the implications of the discussion on the influence of social class, family background and local area differences in grammar school provision in Appendix I of the Report, which suggest that in the future as in the past middle-class children below the old threshold of the pool's outflow would be in a better situation to seize the opportunity of expansion than working-class children, and would make up in zeal and persistence what they lacked in ability.**** It is too early to know with prevision, but it would not be surprising if in the post-Robbins expansion the ratio of middle-class to working-class students has stagnated.

It is important to notice that the causes of the bias in favour of middle-class students do not lie in the universities, which merely choose those best qualified to enter. Innate ability no doubt plays some part, and the admitted tendency of intelligent parents to have intelligent children suggests that those parents who have attained to middle-class occupations by their own ability will have children who will tend to increase the middle-class share of university places. But this obviously accounts for only a part of the bias and, in so far as the latter operates between children of the same ability, it can be traced to three major factors (not to mention a number of smaller ones): better schooling, the influence of better educated parents, and the general influence of the local community. Better schooling is received by the middle class either in the Independent secondary schools where, at least in the 200 or so "public schools", the staff-pupil ratio is 1: 12.3 (as against 1: 19.4 in State secondary modern schools), or in the partly fee-charging Direct Grant schools, in which it is 1: 16.7, or in their greater share of the places in the State Grammar Schools, where it is 1: 16.9.* In all of these, staffs are better qualified and books and equipment move lavishly provided than in the other State secondary schools. The influence of better educated parents, who naturally gravitated to middle-class occupations, shows itself in the fact that the child of a father or mother who went to one of the above three types of school is about four times more likely to enter higher education than one whose parents had been only to an elementary school, while the child of a parent with a degree or a teacher's certificate is over six times as likely to enter higher education than a child with parents without, and ten times as likely to enter a degree-level course.** The general influence of the local community operates through its enthusiasm for education, which stimulates parents and children to want higher education and the Local Authorities to prepare for it more generously by means of more Grammar school places. The Welsh, for example, are celebrated for their educational ambition, and they have a far larger percentage of 17-year-olds remaining at school (17.3% in 1966 as compared with a national average for England and Wales of 12.4%) and a larger proportion of Grammar school pupils (29.6% compared with a national average of 25.3%), and consequently a larger percentage of school-leavers going into full-time higher education (21.7% compared with a national average of 17.8%) and to the universities (5.9% compared with 5.5%). The Welsh achievement is unaffected either by social class or by superior native ability, since their proportion of middle-class families is little more than average, and their proportion of school leavers with two or more A-levels is slightly lower than average (10.6% compared with 10.9%). Within England, too, there were substantial differences in educational enthusiasm which cannot be accounted for in terms of differences in social class or innate ability.*** The Robbins Committee found that the percentage of 17-year-olds remaining at school in 1960 varied between counties from over 13% in Westmorland, Surrey and Hertfordshire to under 7% in Staffordshire, Nottinghamshire, Durham, the Isle of Ely and the Part of Holland (Lincolnshire); and between County Boroughs from over 13% in Bath, Blackpool and Lincoln to under 5% in Nottingham, Salford, Dudley, West Ham and Bury. Rural, agricultural counties appear in both high and low lists, and if there is a preponderance of industrial areas in the low list, the children there were not necessarily less intelligent. The Committee also found that in the West Riding of Yorkshire, where a much smaller percentage of children on the coalfield go to grammar school than elsewhere in the county, a much higher proportion of the coalfield grammar school children had I.Q.s of 130 or more.* On balance the industrial areas are less interested in educating their able children than the agricultural and suburban ones.

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* Conference of European Ministers of Education, Vienna, 20–25 November 1967; if all forms of higher education are included, the British figure is 35% +.

** *Robbins Report*, p. 8.

*** *Ibid.*, pp. 49–54, and *Appendix One*, Part III.

**** *Ibid.*, *Appendix One*, Part II, 'Factors influencing entry to higher education'.

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* DES, *Statistics of Education, 1966*, I, pp. 18–19.

** *Robbins Report, Appendix One*, pp. 54–9.

*** DES, *Statistics of Education, 1966*, I, pp. 14, 54–6, and II, p. 71 (N.B. the percentage of school leavers entering higher education includes all ages 15–19+, many entering further education colleges for non-advanced courses, and is not the same as the 'percentage of the age group').

In general, the Robbins Committee found that the most important factors both in retaining children at school in order to qualify for higher education and in gaining them admission to it are better school provision, an educated family back-ground, and the influence of social class:

> The highest correlations are with the proportion of children in grammar schools, the education of the parental generation and the occupational distribution of the adult population.**

Thus the universities can have little influence, short of distorting their whole selection procedure in favour of working-class background rather than A-level performance, on their proportions of middle- and working-class students. The same is true of the proportions of students from different regions, and of women students. The proportion of children staying on at school in 1966 after the compulsory leaving age of 15 varied from 66.6% in Greater London, 62% in the rest of the South East and 60.6% in the South West to 45.8% in Yorkshire and Humberside, 44.3% in the North, and 43.2% in the East Midlands. The percentages of school leavers entering full-time higher education (and going to universities) varied from over 21% (and over 6%) in the South East and South West to under 16% (and 4.2% of less) in the West Midlands and the North. (Curiously enough, Greater London had one of the lowest percentages entering full-time higher education, 14.8%, though one of the highest going to universities, 6.2%, a disparity which may reflect the greater opportunities for part-time higher education in the London area.)*** The differences between regions in the proportions entering higher education clearly had more to do with the numbers staying on at school — which in turn were due to the social class, family and community influences noted above — than with any other factor.

These factors operated, above all, through the school educational system. English education is socially divisive at every level. Quite apart from the basic social division between the private sector of fee-charging preparatory and so-called "public" schools, mainly boarding, for the rich 6% of the population, the State-supported schools were until recently divided at the secondary level into three kinds catering for three different streams of intellectual ability: the grammar schools, for the highest 20% of the intelligence range; the technical schools, which take a further 2% for a more vocational education; and the secondary modern schools, taking all the rest. In addition the grammar schools are further divided into the wholly State maintained and the "direct grant" schools, that is, private or charitable trust schools to which the Department of Education and Science (not the Local Education Authority) makes a direct grant in return for a number of competitive places open to non-feepaying children. These schools are generally considered of higher status than the State grammar schools, and accounted in 1966 for 2.5% of all 14-year olds. Recently, in an effort to overcome the premature division at the age of 11-plus and allow more flexible streaming throughout secondary education rather than to end streaming as such, Governments of both major parties have committed themselves to the replacement of this tripartite system by comprehensive secondary schools taking the whole range of ability, but in 1966 such schools accounted for only 10% of 14-year-olds, many of them were strictly bi-lateral schools, frequently technical and secondary modern, and many of the rest failed to get their demographic share of the most intelligent children. Moreover, even at the primary level before the age of eleven, streaming is often practised within the schools, and most children know long before they take the 11-plus examination whether they are destined for an academic education which can lead to a university place or whether they belong to the great majority for whom it is out of reach. Since it is now known that home background, not only in the form of access to books and educated conversation but more importantly through drive, motivation or ambition for education, profoundly affects performance in examinations and intelligence tests, and that streaming is self-reinforcing, so that the good get better and the poor relatively poorer, it is obvious that selection for the university is practically predetermined at least by the age of eleven, and often earlier than that. It is often said by educational reformers that the universities are collectively responsible for much of the social inequality which characterizes their intakes, since their high and narrow entrance standards force upon the secondary schools that premature specialization which favours the earlier developing middle-class child. No doubt they must share some of the blame, since a selection based on intellectual potential rather than achievement in two or three inevitably factual A-level papers would perhaps open the doors to a wider social range. But since the social range of those seeking university entrance is already predetermined seven or more years before selection by the university, it is difficult to see this making a fundamental difference. And, certainly, no single university or small group of them acting alone could change the system. The best hope of democratizing access to degree qualifications no doubt lies elsewhere, in the other half of the binary system and the degrees of the Council for National Academic Awards granted without formal entrance requirements by the Polytechnics and other technical colleges, but this is the subject of another report and outside the scope of this one.

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* *Robbins Report, Appendix One*, pp. 65, 73.

** *Ibid.*, pp. 66–7.

*** DES, *Statistics of Education, 1966*, II, p. 71.

As for the difference between the sexes, the Robbins Committee noted that only 7.3% of the girls in the relevant age-group entered full-time higher education in 1962, compared with 9.8% of the boys. Including part-time education, the difference was still greater: 8% for girls and 22% for boys. The difference at the university was more striking than in full-time higher education: 2.5% of the women in the age group compared with 5.6% of the men. This meant that men university students outnumbered women by just three to one. The Robbins Report commented:

> The important point is that the difference between the sexes... has its origin long before the age of entry to higher education. Although nearly as many girls as boys pass the General Certificate of Education at Ordinary level, many fewer stay on beyond this stage to take Advanced level. Of those who do stay on and obtain passes in the Advanced level..., the proportion going into full-time higher education is as high for girls as for boys. But here again there is a difference in pattern. In 1962/3, a quarter of the students in British universities

were women; in Training Colleges in England and Wales two thirds of the students were women.

Since then the percentage of women students in universities has risen slightly, as shown in Table 6, below, from 25.4% in 1961 to 27.0% in 1966. There can be no doubt that inherited intelligence is distributed fairly equally between the sexes. The difference in educational attainment, therefore, must be due to environmental factors, and above all to the widespread belief that women do not need so much education as men, and that the height of ambition for most of the able ones is to teach in a school.

It is against this background of inequality of educational opportunity between the classes, between the regions and between the sexes, stemming from causes completely outside the control of the universities, that we must judge the performance in this sphere of the New Universities. This is fortunate, since their contribution to equality of opportunity is not impressive. Table 3 sets out the social origins of their students as determined by father's occupation, allocated among three social classes adapted from those used by the Robbins Committee and derived ultimately, with some adjust-

Table 3. SOCIAL CLASS OF FATHERS OF UNDERGRADUATES

Percentages

	Intake(s)	Classes I and II	Class III	Classes IV and V
East Anglia	1966	62	14	24
Essex	1965, '66, '67	68	14	18
Keele	1962, '63	70	12	18
Kent	1965, '66	62	14	24
Lancaster	1966	54	19	27
Stirling	1967	61	15	24
Sussex	1966	70	10	20
Warwick	1966	60	20	20
All British university students	c. 1958-59	62	11	27
Heads of households, Great Britain	Census 1951	22	12	66

Notes: (1) The Social Classes are the Registrar-General's, used in the Censuses of 1931 and 1951, as adapted by the *Robbins Report, Appendix One*, Part II, Section 2: Classes I and II = Higher and lower professional and managerial (roughly equivalent to the popular concept of the "middle class"; Class III = Clerical and routine non-manual (the "lower middle class"); Classes IV and V = skilled manual and semi- and un-skilled manual labour ("working class"); the retired, deceased or otherwise unstated fathers' occupations have been distributed among Classes in the same proportions as the rest.

(2) York figures not available; Ulster not yet open.

(3) Social Classes in 1961 Census no longer given in form comparable with Robbins data.

Sources: Secretary/Registrars of New Universities (or access permitted to UCCA forms); *Robbins Report, Appendix One*, p. 40 (for all British students born 1940-4); G.D.H. Cole, *Studies in Class Structure* (1961 ed.), p. 153 (for adjusted categories of heads of households, 1951 Census).

ment, from the five Social Classes of the Census.* Because of difficulties of definition as between Classes I and II, which distinguish between higher and lower professional and managerial, they have been amalgamated, to include all the main middle-class occupations, except for the clerical and routine non-manual ones which, as in the Robbins Report, have been allocated to Class III, the lower-middle class. For the same reason, the difficulty of distinguishing between different levels and skills of manual labour, Classes IV and V have also been amalgamated, to form a single working-class group. There was also the difficulty of allocating the retired, deceased and otherwise unstated fathers' occupations, ranging from 3% at Keele to 12% at Kent, and these have been distributed among Classes in the same proportions as the occupied.

It must be emphasized that the allocation of occupations described by a single word or phrase on the student's UCCA entrance application form can be only approximate, and the figures give only a rough indication of the order of magnitude of the different social groups. The Secretary/Registrars of all but one of the New Universities generously co-operated either by providing these and other figures in Tables 4 and 5, or by permitting my research assistant access to the UCCA forms. Only the Registrar of the University of York refused to co-operate in this way, on the ground that the UCCA forms were kept in confidential files – a curious attitude for a university to academic research. It is said, both in York and outside, that that University has the highest proportions of middle-class and of public-school educated students, but there is no means of checking this assertion.

For what they are worth, the figures show that, in spite of the New Universities' uniform concern to redress the imbalance between the classes, they have not so far succeeded in doing so. Indeed, only Lancaster has managed to achieve the same percentage of working-class students as the Robbins figure for the rest of the universities. This may be due to Lancaster's specially flexible entrance requirements, which allow almost any intelligent student to be admitted, even without formal A-level qualifications, and to the special effort which is made there to consider Secondary Modern school pupils, mature students (students over 23 years of age who have usually ceased formal education before university age and continued to pursue education by informal means), and others of "unorthodox" education. On the other hand, Sussex also has very flexible entrance requirements, and a unique scheme for admitting "early leavers", but they do not seem to have had the same effect on the social class and school statistics. Lancaster apart, East Anglia, Kent and Stirling come within striking distance of the 25% reported recently at the Vienna Conference of European Education Ministers, but the other four fall well below. On the other side, only Lancaster falls significantly below the Robbins average of 62% for middle-class students, while Sussex, Keele and Essex rise considerably above. Sussex in particular is known to be very concerned about its image as a middle-class, public-school university – "Oxbridge by the sea", as it has been called – especially for girls, who find it much harder to get into

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* Strictly, Classes I and II are the same, Class III is the non-manual and Class IV the manual section of the Census Class III, skilled occupations, and Class V is an amalgamation of the Census Classes IV and V, semi-skilled and unskilled manual occupations.

Oxford and Cambridge and appear to treat Brighton, amongst other places, as second-best. It is perhaps significant that Sussex has the most centralized and impersonal selection procedure, which appears to favour the best qualified and most self-assured interviewees, and not to allow enough elbow-room for the interviewer's judgement of the "rough diamond" beneath the shy, gauche or otherwise unappealing working-class applicant. Sussex has done more to study the question of selection than any other university, sending a team to the USA to study American methods of selection, but their recommendations would tend to professionalize and centralize the selection process still more, with the possible effect of still further bias in favour of the well-qualified and self-assured.*

The type of school last attended, as shown in Table 4, is a more reliable but less informative indicator. It shows again that only Lancaster had a significantly smaller percentage of Independent school entrants than the national average, and, amongst those universities giving a separate breakdown of State schools, a significant proportion from State non-grammer schools, though Essex, Kent and Stirling also had significant percentages of Technical College students. The "Public-school" element, however, is nowhere very much larger than the national average, Keele, surprisingly, and Sussex leading the field with 20 and 19%. The great bulk of students, as everywhere except at Oxford and Cambridge, are from the Grammar schools, State and Direct Grant, emphasizing once more the orthodox selection procedures of the New Universities.

It may be thought that New Universities would attract the somewhat more adventurous and less conformist students from "good schools" and educated family backgrounds, and this might help to account for their higher than average proportions of middle-class and privately educated students. If so, perhaps over time they will become more orthodox in their turn and move even nearer to the average in social composition. The only test case open long enough to show a trend in the figures, is not reassuring on this point. At Keele the percentage of students in Classes I and II rose between 1950-51 and 1962-63 from 56 to 70%, and so has the percentage of students from Independent schools, from 4 to 20%, while the percentage of mature students has dramatically fallen, from 7.3 to 2.4%.** But these trends may reflect the special nature of Keele in its early days as the sole experimental New University, with special attractions for working-class and particularly for radical-minded mature students, and its return in more recent years to a more orthodox position.

The regions of the country from which New University under-graduates came are set out in Table 5. Here allowance has to be made for three factors: the share of each region in the national population, which determines the comparative size of the regional pool from which potential students can be drawn; the proportion of the regional population classified as middle-class, which determines the size of that section from which more

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* Geoffrey Lockwood and Barry Supple, *Admissions Policies and Procedures in the United States* (Report to University of Sussex, January 1967); under the "early leavers" scheme Sussex admits ten students a year at normal age who have received no formal education since leaving school at about 16; so far about 30 such students have received honours degrees.

** A.H. Iliffe, *The Foundation Year in the University of Keele* (unpublished report, 1966), pp. 2-3, 10, 13-14; I am indebted to Mr. Iliffe for access to this invaluable report.

Table 4. TYPE OF SCHOOL ATTENDED BY UNDERGRADUATES

Percentages

	Intake(s)	Inde-pendent	Direct Grant	Maintained				Technical college etc.	Educated Abroad
				Grammar	Compre-hensive	Tech-nical	Secondary Modern		
East Anglia	1966	18	9	55	4	4	–	8	2
Essex	1965, 6, 7	11	4	62	2	2	1	16	2
Keele	1962, 3	20	9	58	2	4	–	4	2
Kent	1966, 7	18	7	57	3	1	1	10	3
Lancaster	1966	5	13	52	7	5	1	16	1
Stirling	1967	10	15	58				17	–
Sussex	1965, 6	19	25	42				14	
Warwick	1966	16	12	55	4	4	–	8	1
Oxford and Cambridge	1961	51	17	32				N/A	N/A
Other universities	1961	15	12	73				N/A	N/A
All children aged 14	1966	5.9	2.5	17.5	9.8	2.0	54.2	N/A	–
All children aged 17	1966	15.9	9.1	56.9	7.3	3.7	3.9	N/A	–

Notes:

The Secondary Modern and Technical College columns should strictly be read together, since Secondary Modern pupils qualify for university entrance chiefly by taking GCE A-levels at Technical Colleges, either part-time or full-time, and in the latter case give the Technical College as their last school.

Independent schools are privately-owned or charitable trust-owned, mainly boarding, fee-charging schools, of which the most famous are the so-called "public schools", defined by Mr. R.A. (now Lord) Butler when President of the Board of Education as "schools which are in membership of the Governing Bodies Association or Headmasters' Conference"; Direct Grant Schools are similarly owned but almost wholly day schools which receive grants directly from the Department of Education and Science in return for at least 25% "free places" for scholarship children paid for by the Local Education Authorities: Maintained schools are schools wholly maintained by the LEAs, and popularly known as State schools. (Cf. Tyrrell Burgess, *A Guide to English Schools* (Pelican, 1964), chap. iv).

Sources: Secretary/Registrars of New Universities (or access permitted to UCCA forms); ***Robbins Report***, p. 80 (for Oxford and Cambridge and other universities – calculated from separate male and female percentages); Department of Education and Science, *Statistics of Education, 1966*, I, (1967), pp. 22-3.

Table 5. PERCENTAGE DISTRIBUTION OF UNITED KINGDOM UNDERGRADUATES BY HOME REGION

	Intakes Analysed	Northern	Yorkshire and Humberside	North Western	East Midlands	West Midlands	East Anglia	South Eastern	South Western	Wales	Scotland	Northern Ireland
East Anglia	1966	1	9	6	6	5	7	53	8	3	2	–
Essex	1964	–	13	–	12		1	61	10	3	–	–
Kent	1965/6	2	5	8	4	5	3	65	5	2	1	–
Lancaster	1966	3	9	32	8	7	3	30	6	2	–	–
Stirling	1967	1	–	3	–	2	1	8	1	1	83	–
Sussex	1965/6	3	5	6	5	5	3	62	7	3	1	–
Warwick	1966	3	8	10	6	11	3	45	10	3	–	1
Percentage of U.K. population in Region	1961	6.2	8.7	12.3	6.1	9.0	2.8	30.8	6.6	5.0	9.8	2.7
Regional percentage of Classes I and II	1961	14.8	16.4	17.1	16.5	17.2	20.1	21.1	21.5	18.7	16.2	–
Regional percentage of 17-year-olds in maintained schools	1966	9.7	11.6	10.2	10.8	10.4	9.8	14.7	12.3	17.3	–	–
Regional percentage of school leavers going to universities	1966	4.0	5.4	5.3	5.0	4.2	4.6	6.3	6.1	5.9	–	–

Notes: (1) Figures for Keele and York not available; Ulster not yet open.
(2) The last three lines refer not to percentage distributions *among* the Regions, but the percentages within each Region formed respectively by Social Classes I and II to total population, children of 17 remaining at Maintained schools to children of 13 at such schools four years earlier, and university entrants from the Region to all school leavers aged 15-19 +.

Sources: Secretary/Registrars of New Universities (or access permitted to UCCA forms); 1961 Census Returns; DES, *Statistics of Education, 1966*, I, pp. 54-6, and II, p. 71.

than three-fifths of the students are drawn; and the different regional proportions, mentioned above, staying on at school after 15 and qualifying for university entrance. To these we must add a fourth factor, the special attraction, if any, of the individual university for students from a particular region or regions, especially those nearby.

The most obvious example of this is Stirling, which draws no less than 83% of its under-graduates from Scotland; but this is a peculiar case amongst the New Universities, since the Scotissh one is designed to accommodate entrants from the rather different Scottish school and examination system, and thereby has less attraction for English students (unless they are, as we noticed on our visit, of Scottish parentage). For the rest, what is noticeable is the large percentage in all of them from the South East (including London), with its large population, large proportion of middle-class families, and large percentage of children staying on at school and qualifying. Only Lancaster has significantly less than half its students coming from this region, which is due to its northern situation, while those situated in the South Eastern region, Kent, Sussex and Essex, have over three-fifths from there. Elsewhere the New Universities exercise a modest pull from their own and nearby regions, Lancaster and East Anglia more than doubling the "expected" percentage from their own regions as measured by population alone. In this connection, however, it is important to remember that under the British system of students' grants there is no obstacle to a student going to any university in the country, and, indeed, since the grant for a student living at home is very much less than for one living away, there is a disincentive to applying to the nearest university. On the whole the New Universities have made no effort to attract students from any particular area, least of all their own. Their aim, if they have one, is to draw them from as wide an area as possible so as to achieve a balanced and variegated student body.

Finally, the New Universities appear at first sight, as shown in Table 6, to have achieved a breakthrough in equality of opportunity for women. All without exception have considerably higher percentages of female students than the national average. The latter, however, is weighted by the very masculine faculties of applied science, medicine, agriculture and veterinary science, and if we compare them with the national average for arts, social studies and pure science in 1966, 34.1% we find that they are much less out of line. In fact those New Universities with any applied sciences, Sussex, Warwick and Lancaster, are below this latter average.

Nevertheless, most have achieved a modest swing towards greater equality between the sexes, and this may be due to deliberate policy (only East Anglia dissenting) and to the fact that while interviewers cannot always tell the difference between middle and working-class students they can nearly always tell the difference between a man and a woman.

Except in so far as all British universities, including Oxford and Cambridge, believe in equality of opportunity, the New Universities, then, have done little of a specific, innovatory kind to further it. Those with Schools or Institutes of Education responsible for the academic supervision of Colleges of Education, Keele, Sussex and Lancaster, having necessarily become involved in the new Bachelor of Education degree by which the most able students at the Colleges may transfer to a four-year course for

Table 6. PERCENTAGE OF WOMEN FULL-TIME STUDENTS

	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68
East Anglia ..	–	–	49	42	39	38	39
Essex	–	–	–	36	38	37	34
Keele	43	43	44	42	40	42	40
Kent	–	–	–	–	44	43	42
Lancaster	–	–	–	37	36	32	32
Stirling	–	–	–	–	–	–	46
Sussex	67	50	45	42	37	34	33
Warwick	–	–	–	–	33	34	33
York	–	–	46	47	45	44	42
All British universities ...	25	26	27	28	26	27	N/A

Sources: UGC Returns; New University figures for 1967-68 supplied by Mr. R.C. Griffiths, Deputy Secretary of U.G.C.

a degree as well as the three-year professional teaching certificate. By this avenue it is possible for intelligent students without formal A-level qualifications to take a university degree; but in practice most of the able students at Colleges of Education now have the minimum two A-levels required for university entrance and have been kept out only by the competition for places, and although the degree is awarded by the university all the teaching is normally in and by the Colleges. Only in a few cases, as in the Departments of Biology and History at Lancaster, are university staff taking on part of the formal teaching for B.Ed. students. Perhaps the only institutionalized arrangement for the transfer of non-matriculated students from teacher training to fully internal university degree courses is in the Education Centre at Ulster. This Centre is in itself a revolutionary innovation, proposed by the Lockwood Committee, bringing non-matriculated students for teacher training for the first time inside the university. It thus becomes possible to transfer students both ways, according to their suitability, between the degree and diploma courses. Since Ulster has only just opened, it is not yet possible to know how this good intention will succeed in practice. For the rest, equality of opportunity between the classes, between regions and between the sexes, is a good intention which is still frustrated in practice by the deep-seated conservatism of British society.

III

NEW MAPS OF LEARNING

If the New Universities were created, at least in part, for innovation, the area in which this should manifest itself most strikingly is in the purely academic one of what is studied there. The University Grants Committee in its 1964 report gave as its " further important reason for recommending their foundation... the need for more experiment in the structure of degree courses, in the content of curricula, in methods of teaching and in university organisation ". It went on to add:

> On the academic side, we had declared out main interests to be in the general broadening of the under-graduate curriculum, in the breaking down of the rigidities of departmental organisation, and in the strengthening of the relationship between teacher and taught.*

Their concern for breadth and flexibility in the content and structure of academic studies was part of a general reaction in the world of British higher education against the too early and too narrow specialization which we discussed above.** The problem, we saw there, begins in the schools, at the age of sixteen or even earlier, although the high and narrow university entrance qualification and the intense competition for university places are undoubtedly major factors in contributing to it. The question, therefore, is not only to what extent the New Universities have succeeded in redrawing what Asa Briggs has called the map of learning, by broadening their curricula and breaking down traditional barriers between disciplines, but also to what extent any university or small group of them acting on their own can solve a problem which is deeply embedded in the whole British system of education.

First, however, we must ask whether it is in fact the right problem, and whether the recommended solution, of broader syllabuses and interdisciplinary approaches, is the right solution – or rather, are the right solutions, for there are many variations on this theme practised in the New Universities, with very different educational aims and philosophies. Although breadth and flexibility are now fashionable throughout the educational world, not everyone, even amongst their devotees, is necessarily opposed to specialization. On the contrary, it would be absurd, in a world in which the greatest intellectual and scientific advances have been the result of the division of mental labour, to denigrate specialization, which is and will continue to be inevitable if human knowledge is to progress. But the problem is much more complex than a simple dichotomy between the specialized and the broadly educated. It involves a series of important questions. Specialized in what? In some "discipline", "study" or "science" which was segregated from the seamless web of learning in the nineteenth century before the underlying connections and causes were known or understood, then given a separate label and studied in isolation from the vital cognate disciplines which alone can give it support and significance? Specialized when? Before the student has enough experience, of himself, of the subject and its neighbours, or of his possible opportunities in life, to make a rational choice? And specialized on how broad a base? So narrow that neither the scientist nor the humanist knows or understands even the basic aims and principles of each other's methods of thought and work? So narrow that mathematics, the marvellous instrument with which the pure and applied scientists have probed and manipulated the world of nature and with which the social scientist is beginning to explore the world of man in society, is a mystery to the one in every three university graduates who studies arts? So narrow that the scientist has no notion of the subtle instruments of aesthetic discrimination and qualitative analysis wielded by the literary critic and the historian? So narrow that neither the scientist nor the arts student has time or interest for the fine arts or music? So narrow, indeed, that even the practitioners of cognate disciplines — physicists and chemists, chemists and biologists, biologists and psychologists, psychologists and sociologists, sociologists and historians, historians and literary critics — cannot understand each other's language or make use of each other's insights? So narrow, finally, that no university graduate can claim to be an educated man, with that multiple sensivity to and sympathy for the whole range of purposes and achievements of the human race which alone makes an intellectual life worth while? Specialization on so narrow a foundation is not merely sad and stultifying for the individual — the elephantiasis of the intellect — but dangerous and damaging to the discipline itself, since it denies it fertilizing and fruitful contacts with other disciplines, and ultimately cuts it off from all adaptability and relevance to the ends and purposes of human life.

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* *Op. cit.*, pp. 104–5.

** Part I, Chapter II, Section (ii).

As a solution for the range of problems presented by too early and too narrow specialization, broader curricula and interdisciplinary studies are not necessarily adequate in themselves. The traditional general arts or general science degree at pass level, until recent years the commonest degree in many civic universities, is now generally admitted to have been useless for this purpose. It offered the student the worst of both worlds: a collection of diluted honours courses taught in water-tight compartments, individually inadequate to make him a competent specialist, and collectively too diverse and unintegrated to make him a stimulating and synthesising generalist. The old general pass degree was held to be inferior to the specialized honours degree because it was inferior in practice. In recent years, beginning with the general honours degree in arts at Birmingham University in 1947 and continuing with the "science greats" course at Manchester, there has been some attempt to integrate and to give meaning and purpose to the general degree at many of the civic universities, and to raise the standard to honours level. Yet the problem remains in all departmental universities that the departments will be tempted to devote most of their time and attention to "their own" students on the single-subject (or, at best, dual-subject) honours courses, while it remains no-one's responsibility (save that of an overworked tutor to general degree students, perhaps) to see that the various combinations of general degree courses add up to an integrated, meaningful education with a clear-sighted aim and purpose. And as long as general degree students are taught, as they still commonly are, in separate classes, often by separate staff, they will be regarded, like the lower streams of streamed secondary schools, as second-class citizens.

All the New Universities, with one exception – that of Stirling, which decided to hold to the Scottish tradition of a four-year honours and a three-year pass degree have abandoned streaming into honours and pass students, first- and second-class citizens, and admit all students to a common degree scheme, either labelled honours throughout, or called honours after the Preliminary or Part I stage of the degree. Even Stirling admits all students to a common Part I, and divides them into general and honours degree students at the end of the third semester. Pass degrees, Stirling apart, are awarded only on the results of the honours degree, as a further category below the third class. In so far as they have adopted more general degree schemes than elsewhere, therefore, they have avoided the persistent tendency for the more specialized course to acquire by its own internal pressure, as it were, a higher standard and reputation than the general one. That apart, however, their course structures are as diverse in breadth, flexibility and generality as the possible range of the aims and philosophies of broad and interdisciplinary education. We can arrange them in a spectrum, ranging from the broadest possible education which a student can absorb in a first-degree course to the narrowest possible specialization, and passing on the way through many kinds and combinations and methods of interdisciplinary study, and through varying rates of progression from broad curricula in the first year to narrower specialization in the last. In the process we may discover some of the variety of solutions offered to the problems of specialization, as well as their different educational aims and philosophies.

At one end of the spectrum we have broad education for its own sake, the attempt to re-create, perhaps, Renaissance man, *uomo universale*, the man of universal sensibility and understanding, who attempts to know and comprehend the world around him in all its aspects. This would seem to be the aim of the degree scheme at Keele, with its unique "Foundation Year" and combination in the later years of humanities and science courses. The original aims of the Foundation Year, as evolved by Lord Lindsay and his colleagues in discussions with the representatives of the sponsoring universities of Oxford, Birmingham and Manchester were:

i) To acquaint students with the cultural tradition of Europe, emphasizing the continuity of development of our present civilization and its debt to the past;

ii) To introduce the idea of the unity of knowledge: the relevance to the scientist of a study of the humanities, and the effect on modern society of scientific discoveries;

iii) To identify the major problems of the modern world and to show how they have arisen;

iv) To describe the nature and methods of the main branches of university studies and their interconnections.[*]

Since then the course has been modified more than once, though mainly to increase its effectiveness in achieving these aims, which have not been substantially changed. All first-year students at Keele must attend a general course of 230 lectures lasting throughout the session, consisting of three elements: (*1*) the "main thread" in which the general development of the earth and human progress is traced from the emergence of live via the ancient civilizations to the present day; (*2*) a "discursive treatment", with specific lectures on particular problems and developments bearing on the main series, such as the study of language, the nature of mathematics, or the rights and duties of man; and (*3*) periodic lectures on "recurrent topics", including philosophical questions, the idea of nature, the creative arts, social change, and religious belief. As well as discussion groups on the main lecture course, a student is also required to take two "Sessional" courses of weekly classes through the year on subjects he has not studied before (including science for non-science students, for example), plus three "Terminal" courses of one term each, normally on subjects he has studied at school and with which he will probably continue after the Foundation Year. To ensure breadth the Sessionals and Terminals must be distributed between all three Boards of Studies, humanities, social sciences, and natural sciences. In this way the student is prepared for the remaining three "Principal Years", in which he must take two subjects at Principal level (each for three years) and two at Subsidiary level (each for one year, usually the first Principal Year, that is, the second year of the degree course). Of the four subjects, one must be chosen from the arts and social sciences, and one from the natural sciences. Instead of one of the Subsidiaries a student may take courses and practical work in education, leading simultaneously to a degree and a professional Certificate in Education. A similar arrangement leads to a degree and a Diploma in Applied Social Science.

Many criticisms of the Keele degree, and especially of the Foundation Year, have been made, and not only by outsiders: that it is both too ambitious, in trying to teach too much, and not ambitious enough, since the graduates are not professional enough in any one field; that, although the Foundation Year enables the science specialist to improve in literacy, the ability to express ideas in verbal form, it does not offer nearly so much opportunity to the arts student to improve in numeracy, the ability to analyse and use ideas in quantitative form; and that the main lecture course itself falls short of the aim of introducing students to *all* the major problems of contemporary Western civilization, excluding most notably such matters as the influence on twentieth-century thought of Marx and Freud, and the psychology of nationalism and racial prejudice.[**] Yet, as A.H. Iliffe points out in his admirable study of the Keele Foundation Year, it is some measure of its effectiveness that in the examinations at the end of it a student who specialized at school in mathematics and physics can write for an hour on the nature of symbols in literature or on the necessary economic conditions for a liberal democracy, while his arts counterpart can tackle questions on the laws of genetics or the contributions of chemistry to the prevention of disease. More important, perhaps, is the lasting response he found amongst Keele graduates:

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[*] A.H. Iliffe, *The Foundation Year in the University of Keele*, p. 37.

[**] Cf. Iliffe, *op. cit.*, esp. paragraphs 37, 38-9.

> They feel a greater *confidence*: both in tackling books, articles and broadcasts on topics which lie outside their own special studies; and for those whose work brings them into collaboration with specialists in other fields, in seeking to understand the problems and the attitudes of their colleagues.*

Whether or not Keele succeeded in all its ambitious aims, it has had an incalculable effect upon all the rest of the New Universities, if only because in its ambition it tried out practically every aspect of broad and interdisciplinary studies along the whole spectrum. Some of these, such as the jointly taught discussion groups in the Foundation Year or the objective-test examination will be discussed in their appropriate section below (Chapter VIII), but others will recur in this chapter. The confience of Keele graduates in bridging the arts-science divide takes us to the next point on the spectrum. If a university cannot teach a complete understanding of the modern world, at least it may attempt to illuminate the mutual ignorance of what Lord Snow in a memorable, if oversimplified, phrase has called the " two cultures ". " Crossing the Snow line " has since become a fashionable educational aim, though more recently it has been recognized that there are more, perhaps many more, than two cultures, and that to give students some understanding of at least one unfamiliar discipline outside their own special field is a desirable educational objective. Keele obviously took this task very seriously, and made it a major principle of the degree course. On the whole the later New Universities, where they have taken it up at all, have given it a much less prominent place. Sussex has an " Arts-Science Scheme " which " consists of special lectures and classes through which Arts under-graduates pursue a programme of studies directly related to the sciences and Science under-graduates study aspects of arts and social studies disciplines. Thus, the Scheme provides a means whereby a student may explore problems across the Arts-Science boundaries. " The Scheme is compulsory, in that every under-graduate is required to choose from a range of options approved by his School of Studies, attendance at which counts in partial fulfilment of the degree course. The administration claims that the Scheme is highly popular with the students, but students we interviewed were against it, pointing to the frequent reviews and reappraisals which have prevented it from settling down. York has a series of " open courses " which students are expected, but not apparently required, to follow, in consultation with their supervisors, on such topics as modern architecture, delinquency, " music today ", Britain's economic future, and " chemistry in the world around us ". The lectures or seminars are held at times when all students are free to attend, and seem to be treated much as optional extra-curricular talks and discussions are elsewhere, as voluntary diversions and variations in the academic diet. York also offers a five-year dual degree scheme in which students spend the first three years on a B.A. course in a natural science subject followed by two years on an arts or social science subject leading to the degree of Master of Humanities (M. Hum). Whether or not this is a real contribution to bridging the arts-science divide (significantly in one direction, and that the easier and more usual one) cannot be determined, since there have as yet been no applicants for the course.

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* Iliffe, *op. cit.*, pp. 53–4.

The New University which has most nearly emulated Keele in "crossing the Snow line" is Lancaster, where a course on a "different", "unfamiliar", "distant minor" or "breadth" subject — all these terms have been and still are in use — is an integral part of the degree. The original scheme was for a course which would be one of nine for Part II, the second and third years of the degree. The distant subject would be taken normally in the second year, the consolidated mark (including examination result, if any, and continuous assessment mark) counting equally in the final degree classification with the other eight.* This was still in operation in the non-science Boards of Studies in 1967 and the one first-class graduate in History, for example, gained one of her first-class marks in Principles of Physics. These second-year courses are not, however, specialist courses but are specifically designed for students who have not studied the subject before. The science Departments, while willing to provide such courses for other students, have consistently opposed the taking of them by their own students, on the grounds that those in Part II have no time to spare, since they already have to spend about a quarter of their time on another science subject. After much discussion and negotiation they have agreed to meet the requirement in most cases by allowing their students to take a non-science subject as one of the three required for Part I in the first year. Student opinion is very divided about the scheme, usually according to how interesting and useful the classes were felt to be and, understandably, according to the mark attained. Staff opinion is equally divided: nothing in the whole Lancaster curriculum has caused more lengthy and continuous discussion and dispute.

Moving along the spectrum, we come to much firmer and more generally occupied ground with the idea of providing, not the broadest possible education nor yet a foot on each side of the arts-science divide, but a broader base than usual for the student within a wide but not universal field, upon which he can, late or soon, slowly or rapidly, raise his low and broad or tall and narrow pyramid of specialization. The main questions here are how broad the base should be, and how integrated the general field of study or group of subjects he must master before moving on to specialize more narrowly in one or more of them. It is in this length of the spectrum that most of the New Universities have concentrated their attempts at drawing their new maps of learning.

Sussex led the way in the 1960's with the very idea of redrawing the map. The phrase seems to have been first used in public by Professor Asa Briggs, first Dean of the School of Social Studies and now Vice-Chancellor, in a broadcast shortly before the University of Sussex opened its doors in 1961:

> Apart from these outside pressures which are influencing the supply and the demand for under-graduates and graduates, there are also powerful educational arguments within the universities for breaking down some of the artificial dividing lines which exist there between different academic subjects — for redrawing, if you like, the whole

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* It has since been agreed that from 1969 it will be a mere qualifying course of less weight than the other eight.

> map of learning, and for revivifying among university under-graduates themselves a sense of imagination and discovery.*

Hence Sussex invented the School of Studies in which the under-graduate could learn the essentials of every subject which was relevant to his area of interest, and learn them in common with others with somewhat different interests within the same general field, before going on to specialize in some narrower part of it. The early Schools were centred on the notion of studying either a particular area of the modern world in all its aspects — Europe, Britain and America, Africa and Asia — or around a cognate group of subjects within a general field of study — social studies, physical sciences, biological sciences. Since then have been added Schools of Educational Studies, Molecular Sciences, and Applied Sciences. Within each School all the under-graduates take a common Preliminary course, of two terms, before going on to specialize more, but not very, narrowly, in the Final Degree Course of seven terms. In the Preliminary course some of the subjects are common to all the Schools on each side of the arts-science divide. All students in the arts Schools take history ("An Introduction to History") and philosophy ("Language and Values"), together with a third course determined by the choice of School, such as "Critical Reading" in either English or European literature in the Schools of English and American Studies and European Studies (plus a language course if required), or "The Economic and Social Framework" in the Schools of Social Studies and African and Asian Studies. All students in the science Schools take basic mathematics and a course in "Structure and Properties of Matter", together with one, and sometimes two other subjects chosen from chemistry, biology, and two other kinds of mathematics. Under-graduates make a final decision about their choice of major subject in the Final Degree Course only after the Preliminary examination. This may be one of the conventional subjects already studied at school, such as history, English, physics or chemistry, or one of a range of subjects not usually studied there, some of them unconventional, such as engineering with social studies, or materials science. Many major subjects, including history, philosophy, sociology, economics, mathematics, physics and biochemistry, can be studied in more than one School. Whatever the choice of major subject, however, the student will spend only part of his time on it, and the remainder on cognate or supporting subjects. In the arts Schools the final degree student spends about half his time on his major subject, and the other half on four or five "contextual courses" common to all the under-graduates in his School, some of which, indeed, are common to two or more Schools, thus providing a link between them. These courses are intended to set the context or provide the framework in which the major subject is studied. They include "The Modern European Mind" in the Schools of English and American and of European Studies, "Contemporary Britain" in the first and in Social Studies, and "Concepts, Methods, and Values in the Social Sciences" in the last and in African and Asian Studies. In the science Schools the final degree students spend about two-thirds of their time on the major subject and most of the remainder either wholly on mathematics or partly on mathematics and partly on an adjacent science and/or economics subject. In addition to the Arts-Science Scheme mentioned above, students on both sides of the divide are required to attend joint seminars organized within and between Schools, with some opportunity for contact and discussion between arts and science staff and undergraduates. Thus the Sussex degree scheme is nearer to the Keele end of the spectrum than the others, with the possible exception of Lancaster.

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* Asa Briggs, 'A University for Today', *The Listener*, 7 September 1961.

As at Keele, a price has to be paid for breadth, perhaps a higher one in a three-year than in a four-year degree, in the consequent loss of specialist expertise. One Dean of a School thought that "there is a feeling that the Sussex degree is not sufficiently professional". It is difficult to see how it could be; but since the ostensible aim of the broader course is not to produce a fully finished specialist but a man or woman widely educated in a broad field, though more thoroughly in parts of it, and flexible enough to apply his or her mind to a large range of cognate topics, perhaps the feeling is beside the point. And since in the contemporary world today's specialist may be tomorrow's redundant worker, and may have to re-train for a second and perhaps a third or fourth career, the flexible, semi-specialist tortoise may ultimately leave the inflexible specialist hare behind. This is more likely to be true in those fields of study which are expanding and changing fastest, such as engineering, some of the pure sciences, and certain borderline social studies such as management subjects. That is why, for example, Sussex has avoided, even within the major subject, such inflexible specialisms as the traditional branches of engineering, and has provided instead a series of options in engineering science aimed at producing engineers who can continuously adjust to new developments in this rapidly changing field. And a similar adaptability is expected of the graduates in the Schools of Mathematical and Physical, Molecular, and Biological Sciences, and in Social Studies. Moreover, Sussex took very seriously the University Grants Committee's suggestion that much of the specialist work overloading most under-graduate courses could be postponed to the post-graduate stage for the increasing number of students staying on for a fourth-year Master's degree. The Sussex M.A. and M.Sc. one-year courses by tuition and examination have, indeed, had a considerable success, as we shall see below in Chapter VI.

The Sussex model, of a broad base of common studies within a wide yet integrated general field of studies supporting a narrowing pyramid of more specialized work in the later years of the degree and post-graduate studies, has been followed, with variations, at all the New Universities which have adopted the Schools system of organisation: East Anglia, Essex, Ulster and, with reservations, Warwick. At East Anglia a similar "Preliminary Programme" of two terms, in which in each of the eight Schools the students normally all take the same three or four courses, is followed by the "Honours Programme" in which they concentrate on one or two subjects, and are usually required or encouraged to continue with other courses inside the School plus one or two from the syllabus of other Schools. Thus in Chemical Sciences the student spends most of his time on chemistry, gradually narrowing down to some particular variety of it, but is required to continue with some mathematics and biochemistry in the second year, and in the third with two courses chosen from biochemistry, biophysics, economics, and German or Russian language. In European Studies the student may major in either history or literature, or a combination of the two for a particular country, or in one of them in combination with philosophy, sociology, linguistics, fine arts, or economics, and in addition must take general topics such as "The European States System" or "European Romanticism", plus at least two courses outside the main subject. Thus at East Anglia, in spite of some encouragement towards taking isolated courses from other Schools, there is much less emphasis than at Sussex on interdisciplinary studies.

The same is true of Essex, where a largely common First-Year Scheme in four Schools (including two Schemes in the Physical Sciences leaning towards chemistry and electronics respectively) leads on to a choice of seventeen Specialist Schemes in the second and third years. In the School of Comparative Studies, for example, which stands for the integration of studies in literature, sociology, government and art, first-year students take two common lecture courses, on contemporary society and on society from the end of the seventeenth to the early nineteenth century, designed to introduce them to the relationship between the four aspects in Western Europe, North America, Russia and Latin America, together with an appropriate foreign language. They may then go on to specialize in the literature of one of these areas compared with English literature, or similarly in government, sociology or art, together normally with one or two optional courses in other Departments. Professor D.A. Davie, Dean of the School, claims that Comparative Studies is a "real innovation", since there is nothing like it in Britain or the United States. It is not a mere version of regional or area studies meant to broaden the student's approach to one culture but an attempt to "de-rail" him from his own specialism and bring him into collision with other specialists, to their mutual enlightenment. What is most noticeable, however, about the Essex system is that the real entities are not the Schools but the Departments. The students complain that even in the first year the different subjects are not tied in together and continuously compared (though there has recently been improvement on this point), and that in the later years it is not always obvious how the specialized courses follow on from the First-Year Scheme or why the latter was necessary as a preparation for them. The problem is obviously not unconnected with the departmental structure, and the rapidity with which the students specialize after the first year and become attached to the Department rather than the School. The broad base supports a very narrow pyramid.

At Ulster, on the other hand, the Schools system has been planned to be as flexible as possible, and with the minimum of academic demarcation. Students are to be admitted to one of four Schools or to the Education Centre, to take either a single-subject or a combined-subject programme, but they will be allowed, with the aid of their Advisers of Studies, to construct their own programmes from a selection of "units of study" – six units a year, eighteen for a three-year programme – not all of them necessarily in the same School. The Schools are broad in conception: The School of Biological and Environmental Sciences, for example, embraces a wide range of subjects in biology, geography, geology, meteorology, and so on, and the School of Humanities ranges from Latin and Greek, philosophy and history, to Russian and East European studies. The Education Centre, based on "one of the more revolutionary proposals of the Lockwood Committee", will offer a three-year B.A. or B.Sc. degree programme with education as the main subject together with optional subjects from other Schools, and also a three-year diploma programme for non-matriculated students leading to a teaching qualification, with (as mentioned in the previous section) the possibility of transfer between the two where this is in the student's interest. How the whole system will work out in practice it is obviously too early to say, but in theoretical conception the Ulster degree is fairly close to the Sussex model.

The Warwick degree scheme also aims at breadth and flexibility:

> The University offers a balanced series of courses over a wide field in Arts and in Science. The courses are arranged to provide the maximum of flexibility, in order to enable students to delay as late as possible their decision on the subjects which they are to study in depth, and a number of courses are common to more than one subject.

Perhaps to emphasize this lack of demarcation, the Prospectus is extremely vague about the terminology in use, and mentions the word "School" only in passing. The Schools, however, have for the most part the same names as traditional departments: Economics, History, Law, Philosophy, Politics, Mathematics, Physics; or of traditional joint-honours degrees: History and Politics, Mathematics and Philosophy. Only the Schools of Literature, Molecular Sciences, and Engineering Science (including Electrical Science) seem to promise a broader configuration of studies. The School of Literature is in effect three schools, of English and European, and English and American Literature, both coming within the responsabilities of the Professor of English, and of French and European Literature, under the care of the Professor of French, who also runs the School of French Studies, which includes French history, politics and philosophy as well as literature — "the nearest thing you will get to French greats", as Professor Charlton says. The School of Engineering Science aims to produce thinking engineers who can turn their minds to many applications rather than specialists with only one string to their bow. The emphasis is on scientific principle rather than practical work: according to Professor Shercliff, "the only thing our graduates will need to use their hands for will be to pick up a telephone". Warwick and Sussex, he believes, are going to give a big shock to other engineering departments. The only other Warwick school which completely follows the Sussex model is that of Molecular Sciences. Here, under the guidance of a dedicated generalist, Professor V.M. Clark, an attempt is being made to break down the barriers of "compartmentalized science" and to integrate the study of all the phenomena at the molecular level from physics through chemistry and biochemistry to biology.

Warwick has a first-year course, common to all students, on "Enquiry and Criticism", an introduction to study at the university level, but this and Molecular Sciences and Engineering Science apart, it is the most departmentalized New University next to York. It certainly has the most departmentalized subject of all: mathematics at Warwick is so "pure" that, with the exception of a joint degree in mathematics and philosophy, it is almost completely isolated from the rest of the University. As one non-mathematics professor put it, "it might as well be on Mars." Counter to the trend of development in most other subjects in most other New Universities, it has withdrawn into an ivory tower so narrow and so high that, while its horizons are immense, it can scarcely see the local landscape. This has paid off handsomely in terms of prestige and financial support, thus confirming the attractions and rewards of intense specialization. In its third year of existence the Warwick School of Mathematics has almost the largest number of post-graduate students in Britain, second only to Cambridge, and attracts visiting mathematicians from all over the world. It is an admirable proof that a New University can have one or more " centres of excellence " if it is really determined, but at what cost to the host institution Warwick is in a good position to say. For the rest, the degree courses at Warwick are divided into a more general first year and more specialized second and third years. Apart from the joint Schools, such as History and Politics or Mathematics and Philosophy, there is some opportunity, in different years in different Schools, to take optional subjects in other Schools, but this is rarely of an ambitious interdisciplinary kind – Politics students, for example, take options in economics, history or philosophy – and sometimes interdisciplinary in a sense peculiar to Warwick: third-year Mathematics students may *transfer to another School* to specialize in a branch of applied mathematics! In content as in structure the Warwick degree is more specialized than that of most non-school New Universities.

Kent is at first sight the most traditional in structure, having faculties as well as departments. In practice, however, the faculties operate in much the same way as the Sussex schools.

> The four-term Part I is concerned with an area of study wider than the conventional single subject. It usually comprises the territory generally covered by two or three related subjects of the normal type. It involves a deliberately integrated approach to this field of study, and is not merely an aggregation of the individual contributions of the separate disciplines lying within it. This allows fundamental principles to be exhibited, the essential connections to be made between related topics, and provides a secure foundation for the more specialized and advanced study appropriate to Part II.

Thus all students in the Faculty of Humanities take a common Part I course in " Contemporary Society and its Background " plus an appropriate language. The former consists, in the first two terms, of lectures and classes on the history and literature of " Britain and the Contemporary World " and an introductory course on Philosophy, including critical thinking, elementary logic and scientific method, and moral and political questions. In the third and fourth terms students take an approved combination of two topics chosen from:

1. Education and the Idea of Culture.
2. The Evolution of the City.
3. Freedom and Authority.
4. Realism and Naturalism.
5. Romanticism.
6. Science and Religion.
7. Working-Class Movements.

These are genuinely interdisciplinary courses, with each topic studied from the literary, historical and philosophical point of view, with foreign texts where appropriate, and given by lecturers and tutors from different departments. Similarly in the Faculty of Social Sciences, Part I students take a common course consisting of economics and accounting, economic and social history, law, politics and government, sociology, economic and social statistics, and a modern foreign language. The Faculty of Natural Sciences, is in effect three schools (at least from October 1968 when biological sciences are added), with common Part I courses in mathematics (with about a third of the student's time spent on economics or physical sciences or philosophy), in physical sciences (including courses on "mathematical tools"), and in biological sciences. On this broad base students specialize quite sharply in the last five terms, in either a single-subject or a joint-subject Part II. The single subjects include the usual range, from English and American literature to physics, while the joint ones include such combinations as chemistry with control engineering, and history with politics and government. With its broad base and fairly narrow pyramid of specialization the Kent degree lies somewhere near the middle of the spectrum.

Stirling is also a departmental university which takes a broad approach. This is in the Scottish tradition, where a common first-year course in a wide range of subjects is traditional. What distinguishes Stirling not only from the other Scottish but from all the other New Universities except Keele and Warwick is that all the students take a common course occupying two semesters (one year) in "Approaches and Method".

> After a short initial period of instruction on information retrieval and the use of the Library, the first semester of the course deals in general with the nature of language and its various uses. It introduces the basic ideas of logical appraisal and emphasizes the application of logic as an analytical tool for clarifying both technical and ordinary language. It deals with imperfections in the use of language, with style and with communications media. The second semester covers the use of numbers, with an introduction to the computer, social arithmetic, problem analysis, uncertainty and games theory; scientific method, discovery and invention.

This is perhaps an updated version of the logic and rhetoric (systematic thinking and effective communication) which figured so largely in the traditional Scottish degree. It would be good to be able to report that so admirable a conception was working well and that its value was appreciated by the students, but the latter, admittedly before they had reached the less familiar numerical half of the course, complained that it was boring and a waste of time. Perhaps this was due to lack of experience of general education on the part of the specialists in English and philosophy who were responsible for the first half, and can be remedied in future years. But the trouble may lie deeper: all university education, one hopes, is concerned with systematic thinking and effective communication, but a special course on these attended by all the students stands in danger of exercising them on too generalized and therefore trivial and boring illustrations. Perhaps a division into two courses, one on verbal concepts and communication for scientists and one on quantitative analysis and expression for arts students, would be an improvement. The rest of the Stirling Part I is made up of eight more semester-courses, including at least one Major course lasting through three semester- courses, plus a combination of five more made up from another Major (three semester-courses) and/or subsidiaries (two each), and Minors (one each). This means that, as far as the time-table allows, the student has considerable choice in making up a course to suit himself, which may be as interdisciplinary as his qualifications and mental agility allow. Part II for the General degree (lasting a further three semesters) will be similarly made up of semester-courses, a minimum of seven in all, in which a Part I Major subject is continued through to the end, together with at least one other cognate subject for a part of the time. Part II for the Honours degree will last five more semesters (four years in all), in which either a single subject occupies most of the student's time and a second one is studied less extensively, or two main subjects each occupy roughly half. It will also be possible to combine education, including teaching practice, with a single main subject, leading to an Honours degree and a professional qualification in six more semesters (a total of four and a half years). The Stirling system thus offers a base of varying breadth followed by narrowing specialization, wider for the General degree, narrower but not pared down to a single subject for the Honours degree. How broad the base will be in practice will depend on how intense the competition is to get into the Honours Part II. The Secretary expects that about 40% will be admitted. At that rate the ambitious Part I student is almost certain to concentrate on a narrow range of mutually supporting subjects which will give him the best chance of proceeding to Honours.

Lancaster is also a departmental university which goes in for breadth throughout the degree:

> The course structure for first degrees at Lancaster provides *flexibility*, by ensuring that qualified students have a choice between two or more major courses after their first year of study; sufficient *depth*, by allowing considerable specialization in a major subject or a group of combined major subjects; *balance* by the inclusion of schemes of study either of a minor course closely related to the major interest or of at least one other major subjects; and *breadth* by an additional course giving insight into a subject and method of thought different from the student's major interests.

In the first-year Part I the student takes three subjects of equal weight, including his intended major or majors, the remainder being selected from a cognate field, including where relevant subjects he has not taken at A-level. Thus a history major may take one other subject from economics, French studies, philosophy, politics, plus a second subject from that group or one from classical background, English, environmental sciences, religious studies, and Russian and Soviet studies. At the end of the year, depending on his examination and continuous assessment results, he can elect to major in Part II in any of his three subjects (or two or three in the case of a joint major). Hence, whatever his original intention, he does not make a final decision on his main specialism until the end of the first year. In part II, occupying the second and third years, he may spend two-thirds of his time (six units out of nine) on his major subject, two-ninths on a cognate minor such as politics or English for historians or computer science for mathematicians, and the remaining ninth on a second-year "distant minor" or "breadth subject", such as, for historians, "Biology and Man", "Introduction to the Physical Environment", "Outline of Mathematical Ideas", "Principles of Chemistry", or "Principles of Physics". A joint-major student in, say, History and Politics or Environmental Sciences and Physics, spends four-ninths of his time on each of his majors, plus either the breadth subject or, if he is deemed to have fulfilled the breadth requirement (as in the second example), a cognate subject such as Mathematical Methods. Triple major students in Politics, History and Philosophy or Economics, Mathematics and Operational Research spend a third of their time on each subject and are deemed to have fulfilled the breadth requirement. A variation on the scheme is that most science departments prefer their intending major students to fulfil the breadth requirement in Part I instead of in the second year. This is a concession to the pressure for professional specialization in the science degree. There is also pressure from the arts side for a broader definition of the breadth subject, so as to allow arts students to take non-science subjects such as social studies or even creative arts, and concessions to both pressures are in process of being made. Whatever happens on this front, however, the Lancaster degree will remain broad-based and with a somewhat wider and flatter pyramid of specialization than some of the other New Universities.

York has been called "the most conservative of the New Universities", an epithet of which it is alternately proud and hypersensitive. It is certainly the most traditionally departmental in its curriculum, if not, as we shall see, in its organisation. The degree courses are of two kinds, single-subject and combined-subject degrees. Apart from the Social Sciences, however, where all the students (as, indeed, is now common in many traditional universities) take a common Part I course, all the degree courses are in effect variations on the traditional single or joint-honours degree. Thus the student may elect from the moment he enters the University to concentrate all his time on a single subject, such as history or chemistry (except for ancillary subjects, such as language or mathematics), or he can combine it with another subject either equally, as two main subjects each occupying half his time, or unequally, as main and subsidiary, occupying two-thirds and one-third respectively. Although some of the combinations are cross-disciplinary, such as Biology and Language or English and Sociology, there is no attempt at interdisciplinary integration of the subjects. In spite of the cross-disciplinary "open courses" mentioned above, the York degree is undoubtedly, and intentionally, at the more specialized end of the spectrum, as far as it can be from the general, interdisciplinary education represented by Keele. Its protagonists are, on the whole, dedicated specialists themselves, most of whom believe that their own subject is a complete and ideal education at the university level.

This brings us back to the question from which we started, to what extent any university can or should try to remedy the too early and too narrow specialization which begins in the schools at or before the age of sixteen. Many of our most deep-seated problems spring from this, and are beyond solution by the time the precocious specialists reach the university, at any rate in the course of a three-year degree. The notorious swing from science to arts, for example, begins in the school *before* O-levels, and by the sixth form, pupils who have already abandoned science and especially mathematics can scarcely ever regain the ground they have lost sufficiently to take a science degree. None of the New Universities has succeeded in devising an effective means of enabling arts students to transfer to science. Even at Keele, with its flexible multi-disciplinary four-year course, where as many as two-thirds of the 1963 intake made some change in the subjects they originally intended to take, the vast majority of changes are either within the same Boards of Studies or from science to arts and social studies. As Iliffe points out,

> Migration is inevitably one way; however interested an arts student might become in the science subject to which he has been introduced in a Sessional, there is little possibility of taking it up as a principal subject. In Mathematics, Physics or Chemistry entry to honours courses

> without the appropriate A-level pass is possible only if the decision is made before the beginning of the Foundation Year, and the student successfully completes a Transfer Course. Only four such courses have been attempted since the scheme was introduced.

Altogether, only 15 students in the 1961, 1962 and 1963 intakes changed course from arts and social studies to science (including biology and geology), as against 170 who changed from science to arts and social studies. Indeed, entrance selectors at Keele have to allow for a 40% loss of students from science departments at the end of the Foundation Year.* Whatever the reasons for this flight from science — and it is noticeable that on the whole it consists of the weaker of the science students, especially those weak in mathematics, arguing again that the problem begins with the lack of good science and mathematics teaching in the schools — it is arguable that with less specialization, and especially more mathematics, in the schools there would be at least a compensating drift from arts and social studies to science.

The problem, meanwhile, is being tackled at the right end, in the schools, in consultation with the universities. The Schools Council has proposed to the Committee of Vice-Chancellors and Principals that university entrance requirements should be less specialized, and should consist of only two A-levels (instead of the three required in practice) together with four to six "elective courses" on more general subjects, devised and examined by the schools themselves.** To this scheme most universities replied that it would not in fact broaden sixth-form education but on the contrary lead the schools to concentrate on the remaining two A-levels, and would certainly do nothing to strengthen the knowledge of the indispensable tools of mathematics and modern languages. A more relevant solution is offered by the Dainton Committee, who propose that every sixth-former should continue with a broader education, including compulsory mathematics,*** though voices have already been raised against this on the grounds that compulsory mathematics would further alienate aesthetically creative students from going to university at all. Finally, Mr. A.D.C. Peterson, Director of the Oxford University Department of Education and of the International Baccalaureate Office, has put forward the International Baccalaureate examination, very similar to the Dainton Scheme, with three major and three minor subjects, including mathematics. This is already accepted for matriculation by fifteen British universities and by others in France, Germany, Sweden and Switzerland.**** Without some such change in sixth-form curricula and university entrance requirements, the new maps of learning in the New University will still contain large areas of territory inaccessible to the majority of students.

Finally, the question of context and structure of university curricula takes us right back to what universities are for, especially from the point of view of their chief "input" and "output", the students themselves. It is doubtful if there ever was a time when universities existed only for the advancement of learning and the training of scholars. Even in the middle ages the practical, career-oriented students preparing to take their place in the extra-mural world as secular clergy, lawyers, doctors, teachers and administrators far outnumbered the potential lecturers and scholars. Today, when a degree has become the indispensable passport to almost every kind of career demanding high intellectual ability, and the universities are thronged with students who have little desire or opportunity to become scholars or researchers, or indeed in many cases to pursue their studies beyond the final examination, it is obvious that the old-fashioned single-subject honours degree designed to produce such scholars and researchers is inappropriate to the vast majority of students. In fact, it is doubtful whether it is even appropriate to the specialist researcher, since most of the great discoveries and advances are being made in the borderlands between traditional disciplines, as in the "cracking" of the genetic code of DNA by a team of biologists, biochemists, crystallographers, electronic engineers and computer scientists, or by the application of interdisciplinary tools, as in the radio-carbon dating of archaeological specimens or the use of statistics in historical analysis. Inside and outside the university, the graduate needs that flexibility of mind, that ability to connect the apparently unrelated, to unite hitherto disparate fields of experience, which in industry and commerce is market opportunism and in scientific or scholarly research is the inductive leap of genius. Interdisciplinary education is the path of progress for both the specialist researcher and the non-specialist business man, as well as the passport to a more interesting, alert and cultivated life.

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* Iliffe, *op. cit.*, paragraphs 113–22 and Appendix V.

** Cf. Committee of Vice-Chancellors and Principals, *Proposals of the Schools Council for Sixth Form Curriculum and Examinations* (Academic Consultative Conference, 17th November 1967).

*** *The Flow of Candidates in Science and Technology into Higher Education: Report of the (Dainton) Committee* (HMSO, London, Cmnd. 3541, 1968).

**** Letter in *The Guardian*, 11th March 1968.

At the more humble level of the vast majority of students preparing for a vocational career the old-fashioned single-subject honours degree is even less appropriate. The employment market for graduates in this country is a curious one. Large companies spend thousands of pounds advertizing in the national press and sending teams of interviewers round the universities in order to recruit specialists, notably in science and technology, whom they then use either for research work demanding only a fraction of their expertise or for managerial duties requiring none at all. Disappointment with the general ability of specialists to manage the complexities, especially the human complexities, of a modern business has led many of them to recruit non-specialists, or rather specialists in the humanities and social studies, as being more flexible in their approach to the non-quantifiable aspects of decision-making. It is no accident that, as a survey by *The Observer* showed a few years ago, the highest-paid graduates in business in the middle thirties age group were historians and economists, both trained in analysing multi-factoral situations involving people as well as things. Some employers have discovered that it is easier to teach arts graduates the basic technology of their industry than to teach scientists and technologists to handle people. But it would obviously be better for all concerned if arts graduates already understood the basic principles of science and technology and could grasp a mathematical argument, and scientists and technologists had some of the awareness of the multiplicity of factors affecting a human situation of the historian or the social scientist. The best employers, indeed, seek out graduates in any specialism who show signs of being able to apply their intellectual training to wider issues and problems, while nearly all will fall eagerly upon an articulate generalist able to express himself in both words and figures. In short, the employment market, demanding graduates in unprecedented numbers and taking specialists for lack of more appropriate products, is crying out for more broadly trained, flexible people who can turn their minds to whatever subject has a bearing on the increasingly complex process of managing and administering modern business, governmental and professional institutions. The division of mental labour, like that of manual, was never more than one half of the process of social production: the other half, forgotten by Adam Smith, is the reintegration of the divided parts into a coherent whole, a product or a service. The future belongs not to the specialists, who will be the necessary instruments, but to the integrators, who will be the entrepreneurs both of the production of goods and services and of the production of new knowledge and scientific advance. This is the real justification for the new maps of learning in the New Universities. It is also their market opportunity.

The content and structure of what a university teaches affects every other aspect of its structure and organisation, from the way it appoints its staff and the institutional units to which it attaches them, to the buildings in which they teach and research and administer. Rather than deal with these aspects in this section it seems better to leave them to their appropriate places. One important aspect of the interdisciplinary approach, for example, is the extent to which the teaching of related subjects is genuinely interdisciplinary and given in dovetailed lecture courses, joint seminars, and the like, or is given in separate classes which leave the student to make the connections for himself. This will be dealt with in Chapter VIII below, on Teaching Methods and Assessment. Another aspect is the place of post-graduate studies, whether specialized or interdisciplinary, which will be dealt with in Chapter VII. Others are the recruitment of staff, Chapter VI, their allocation to segregated departments or overlapping schools of study, Chapter V, and the development of new subjects and specialisms, Chapter IV. A word about buildings, however, in so far as they have not beendealt with in Chapter I, Section (iii), "The Integrated Pedestrian Campus": it is obvious that the division into subjects and the extent and nature of interdisciplinary approach to them will have a profound effect on the buildings in which they are studied. Much can be learned about a university and how it is organised from what the individual buildings are called. Sussex, with its Arts Building, Physics Building, and other eponymous subject buildings, is clearly a different kind of university from Kent, with its Eliot, Rutherford and Keynes Colleges, or from Essex, with its Square Four and its departmental areas in a continuous teaching block. Yet whether the arts and social studies are housed in separate subject buildings, in colleges or in continuous teaching blocks, the pure and applied sciences everywhere, with their heavy demands for space and equipment, tend to crystallize out in separate buildings, as at Sussex, Kent or Lancaster, or in large semi-independent segments of the teaching block, as at Essex or East Anglia. Indeed, one of the strongest forces making for the segregation of specialisms is the physical separation of the science subjects. In Lancaster, for example, a few of the science staff have tried to opt out of membership of college senior common rooms, although the colleges in question are a matter of only a few feet across the pedestrian spine from the science buildings. Departmentalism, as we shall see in Chapter V, is a powerful disintegrating force. When allied to physical segregation in a separate building, it is almost irresistible.

IV

SPECIALIZATION IN THE NEW UNIVERSITIES

Although most of them are committed to interdisciplinary courses at the undergraduate level, the New Universities have naturally had to concentrate on some areas rather than others, both for teaching purposes and still more for the purposes of research. As the University Grants Committee remarked in their 1964 Report,

> The range of subjects is somewhat similar; in their earlier years, the New Universities will concentrate on the building up of the arts, social studies, pure science and, in a more limited way, applied science.*

This is principally because the bulk of the demand from students is for arts, social studies, and pure science, and these three subject areas, especially the first two, are much cheaper to provide for, in terms of capital equipment and maintenance, than applied science or medicine. It is also because applied science and what may be called the "social technologies" – medicine, dentistry and law – are except for architecture amply catered for elsewhere, the first in the ex-colleges of advanced technology and the polytechnics, the second in the well-established schools associated with the existing universities.

The New Universities are, of course, as autonomous as the older ones, and cannot be debarred from teaching what they like (within the limits laid down, for example, in the case of medicine and dentistry by the need to obtain the recognition of the General Medical Council). Equally, they are no more autonomous than the rest, and can be effectively discouraged from developing a particular subject by the financial pressure of the UGC. Except in a limited number of subjects, and usually for short periods of years, the UGC does not appropriate special "earmarked" grants to particular subjects, but it can increase the block grant to a university which wishes to develop a certain field of study and reject the application for funds to support a project it does not wish to see developed. In the past two sessions, as we have seen, it has begun to issue "guidance" to individual universities on what they should and should not develop during the present quinquennium, 1967-72, and a great deal of exegesis has been practiced in university Councils and Senates in interpreting its real force and meaning. For example, if a particular, strongly pressed development is not specifically discouraged by name is it then open to the university to pursue it, and with the aid of funds from the block grant or without? In theory, it is always open to a university to develop a new subject with privately donated funds, but in practice it is almost impossible to avoid some call on public funds. Nevertheless, the New Universities have within very wide limits been able to follow their own inclinations, suitably influenced by student demand and academic opportunity, in their choice of subjects for study and research. All of them without exception have established schools, faculties or departments in the traditional fields of arts, social studies and pure science. Within those fields they have, as we saw in the last section, selected options and combinations of their own. The omissions, indeed, are as interesting as the inclusions. All have avoided traditional theology, the medieval "queen of the sciences", from the study of which, it may be said, the original idea of a university sprang. Lancaster and Sussex, however, have developed religious studies, the comparative study of religions in all their aspects, including but not giving primacy to Christianity. York, East Anglia, Essex, Warwick and Stirling have avoided classics (Greek and Latin literature, history and philosophy), on the grounds that it is sufficiently catered for elsewhere. Essex has even managed to avoid history, except as an integral component of other disciplines such as literature, government and sociology, because, it was said, historians tend to build separate empires independent of their neighbours.

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* UGC, *University Development, 1957–1962*, p. 105.

Technology, on the other hand, has been avoided by most, not as a permanent policy but as a lower priority to be developed organically out of the pure sciences when they are firmly established, and where possible with a distinctive approach different from traditional departments of engineering. Sussex established a school of Applied Sciences in the second wave of new subjects, Warwick a School of Engineering Science from the beginning. Both emphasize the general scientific foundations of technology rather than the professional training of specialist varieties of engineer. Lancaster has established a Department of Systems Engineering, devoted to the study of the totality of large systems such as an entire industrial plant or the whole electricity supply system of the country, including the human and accounting elements. It has also just established an Engineering Department on the same broad lines as Sussex and Warwick — an example of a project not specifically encouraged nor yet specifically ruled out by the UGC's "guidance", and one which is to be financed out of both public and private funds. Amongst the rest, Kent and Essex have made a start in applied science with electronics, Stirling with M.Sc. courses in Mathematical Psychology and Technological Economics, and Keele with a Research Department of Communication, which unites mechanical and electronic engineering with the physiology and psychology of the information-processing functions of the brain and nervous system. Keele also made a bid to found a medical school on a new and imaginative basis, stressing the non-vocational aspects of medicine and the underlying scientific and sociological facts, "without which the whole of medical science becomes so much empiricism," but was unsuccessful. Where Keele failed, Warwick may be successful, since it has been recommended for a medical school by the recent Royal Commission on Medical Education. Although Sussex has a post-graduate Nurse Training Scheme, no other New University in the foreseeable future is likely to be allowed to develop a medical or a dental school. Nor are they likely to want to found schools of agriculture and forestry or veterinary science. The modern trend, as in technology, is to pursue the study of the underlying scientific principles at the under-graduate level, and leave their application to post-graduate schools and research institutes. East Anglia, for example, provides undergraduate training in the School of Biological Sciences, which is associated for research purposes with the Food Research Institute in Norwich, the Fisheries Laboratory at Lowestoft, and the John Innes Institute (concerned with soils and plant nutrition). Ulster, situated in a different sort of agricultural area, will pursue research in soil biology, ecosystems, and freshwater biology, and Sussex has a unit for Nitrogen Fixation studying bacterial fixation in soil and plants. Biology at Stirling, on the other hand, is pursuing the application of the science in a different direction, in a course mounted in co-operation with the Aberdeen Medical School on human ecology.

Apart from medicine and dentistry, the only other field in which the New Universities have been positively discouraged from developing is that of the "Hayter" subjects (so-called from the UGC Sub-Committee on Oriental, Slavonic, East European and African Studies under the chairmanship of Sir William Hayter), which, following on from the earlier Scarbrough Committee, set out to encourage the study of these areas of the world in ten Centres for Area Studies, only one of which is in a New University, the School of African and Asian Studies at Sussex. This has not prevented some of the others from developing an interest in these areas, especially in Russia and Eastern Europe, one or both of which are studied at Keele, East Anglia, Essex, Lancaster and Ulster, as well as at Sussex. Lancaster is founding a Centre, to be called the Comenius Centre for East European Studies, but since this has been specifically discouraged by the UGC's "guidance" it will have to do it entirely out of appeal funds.

The UGC in its 1964 Report went on to say that "thought has also been given in some instances, in deference to local interest, to the building up of certain other subjects such as architecture, post-graduate studies in business management and so on, but in general these possibilities have been left for later consideration."* This somewhat lukewarm deference to local interest, in marked contrast, one might think, with the enthusiasm expected from local sponsors, has led in a number of cases (apart from those in biological applied sciences noticed above at East Anglia, Sussex and Ulster) to specialized research institutes co-operating with local interests or industries. At York, indeed, the institutes arrived before the University. The Institute of Advanced Architectural Studies and the Borthwick Institute of Historical Research were founded, as we have seen, by the York Civic Trust as part of the campaign for establishing a university. They utilize the architectural and historical treasures of the City of York, the first to give short specialized courses to practising architects and allied professional men, the second as a record office specializing in ecclesiastical archives. Both have been incorporated with the University, and work in co-operation with it, the first in studying the design of university housing, the second in providing facilities and instruction for under-graduate and post-graduate projects and research in the archives. An Institute of Social and Economic Research was set up at the same time as the University with the financial help of the Joseph Rowntree Memorial Trust, which has a long history of charitable work and social research in York, going back to the famous pioneering poverty survey by Joseph's son, B. Seebohm Rowntree, in 1899.* The Institute is now conducting research on public finance, human resources and welfare services, the health services, and the government of British universities (the last by Graeme Moodie, the Professor of Government).

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* UGC, *op. cit.*, p. 105.

Sussex also has a Social Research Unit, and thirteen other research institutes, mostly founded with outside connections and support: the Astronomy Centre, which collaborates with the nearby Royal Greenwich Observatory at Hurstmonceux; the Science Policy Research Unit, with a variety of projects financed by British government departments and international bodies, including a study of international trade for the Directorate of Scientific Affairs of OECD; the Centre for Contemporary European Studies, specially concerned with the problems and prospects of European integration; the Centre for Multi-Racial Studies (supported by the Bata Shoe Organisation) which has a branch, in conjunction with the University of the West Indies, in Barbados; The Centre for Research in Collective Psychopathology (supported by the Columbus Trust), to investigate "the destructive potentialities which appear to be latent in all mankind"; The Institute of Development Studies "to identify and study development problems arising both within the United Kingdom and abroad concerning economic and social development and administration"; and the Centre for Insurance Studies (supported by the British Insurance Association in conjunction with the Chartered Insurance Institute), the only university centre for the academic study of insurance in the country. Warwick's most successful specialization, as noticed above, is in its International School of Pure Mathematics. The School of Engineering Science, established in the heartland of the motor vehicle industry, collaborates closely with the laboratories of the Motor Industries Research Association, whose Director is an Associate Professor of the University. A similar collaboration takes place with the Central Instrument Laboratory of Imperial Chemical Industries, whose Head of Process Analysis is also an Associate Professor of Electrical Science with special interests in the M.Sc. course and the research work in Automatic Control. The University Library has established a European Documentation Centre, which is recognized as an official depository for the Council of Europe, the European Free Trade Area, and the Western European Union. Warwick has also developed a strong post-graduate School of Business Studies, including management, operational research, industrial relations, and marketing, with no fewer than eight professorships supported by the Institute of Directors and a number of large foundations, banks and industrial firms.

The first university Departments of Operational Research and Marketing in the country were founded by Lancaster. They form, along with Systems Engineering already mentioned and the new Wolfson Chair of Financial Control, the core of a powerful Centre for Business Studies, and, through their immensely productive practical researches in collaboration with a large number of business firms all over the country, have already made a considerable impact on the business world. Operational Research in particular, concerned with the scientific study of decision-making in large-scale organisations in industry and government, has enjoyed a tremendous success, both financially – most of the cost of the Department comes from research contracts – and in terms of national and international prestige. It has drawn staff from as far afield as the US Pentagon and Australia, has a "twinning" arrangement with the University of Pennsylvania, and, through its first Professor, B.H.P. Rivett, who has migrated to establish the discipline at Sussex, has created a joint Institute for Operational Research to share staff, supervision of students and the negotiation and operation of research contracts between the two Universities. With its interest in defence problems it has also collaborated with another Lancaster innovation, the mathematically based research in Conflict Studies in the Politics Department. Operational Research is also studied as an element in the M.Sc. in Technological Economics at Stirling, and in the M.Sc. in Statistics and Operational Research at Essex, though these are mainly taught courses without the large backing of practical industrial and other research work as at Lancaster, Warwick and Sussex.

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* *Poverty, A Study of Town Life* (1901); cf. also his *Poverty and Progress, A Second Social Survey of York* (1941) and (with G.R. Lavers), *Poverty and the Welfare State; a Third Social Survey of York* (1951).

Essex has one of the most important innovations in the whole range of modern research inside and outside the universities: the Social Science Research Council's Data Bank which began operation in October 1967 as the centre for storing data derived from social surveys sponsored by government departments, commercial organisations, and academic researchers, so as to make it available for comparison and secondary analysis by other researchers. It stems from the recommendation by the Social and Económic Archive Committee for the creation of a British national archive of social survey data. The Social Science Research Council has made the provision of survey information to the Data Bank a condition for the award of its research grants – a regulation which has not been welcomed by researchers working in the more confidential fields, especially those involving industrial and other company secrets. The Bank works in conjunction with the University Computer Centre, and the information is transcribed from the original punched survey cards onto magnetic tape. The project, it is hoped, will become increasingly valuable to everyone working in the enormous field of social surveying, from pure academic empirical sociology to applied market research.

Many of the New Universities also specialize in the study of themselves, notably Sussex, Essex and Lancaster, which all have, or have had, units or departments of higher education or the like. These belong, however, to the sections on Teaching Methods and Assessment (Chapter VIII) and Planning and Finance, (Chapter XI), where their activities will be discussed. Several of them also have centres, units or separate buildings for language study, closed-circuit television, audio-visual aids, or educational technology, as it is beginning to be called, and these will also be discussed in Chapter VIII.

In none of these subjects or research developments, except the Essex Data Bank, do the New Universities claim to have a monopoly. They are simply responding, perhaps with the greater flexibility of youth, to the changing demands of students and of society and to the changing nature and logic of academic disciplines themselves. If there is one motivation which influences them all, it is academic opportunism. As long as universities are alive and kicking, they ought to respond to the needs of society and of the subjects which they study. The New Universities are doing no more than their duty.

V

THE GOVERNMENT OF THE NEW UNIVERSITIES

British universities are self-governing corporations, and have always enjoyed a traditional independence of State or other outside control. Their autonomy has been jealously guarded even while their dependence on the State has risen from 31% of their recurrent expenditure in 1938-39 to 72% in 1964-65, and from a negligible percentage of capital expenditure to over 90%. Even now, when the Public Accounts Committee of the House of Commons has access, through the Comptroller and Auditor General, to the account books of the universities, they are still in more than theory self-governing institutions, for their rights to study and research into what they like, to appoint academic staff, select their own students, set their own degree standards and, within very wide limits, determine their own structure and organisation and methods of control and management, are not called into question. Their Charters, granted by the Queen in Council (on the advice, of course, of the Government and, through it, of the University Grants Committee), make them each without exception "one Body Politic and Corporate with perpetual succession and a Common Seal" (or some equivalent form of words), able to own property, receive income, and to do all other lawful acts in pursuance of their objects, normally the advancement of knowledge, wisdom and understanding by teaching and research. All the New Universities have been granted such Charters, based on a "model" Charter, drawn up by the UGC before the Sussex application. They differ only in detail according to their specific structure and organisation, and the New Universities are accordingly as autonomous as the rest.

Yet the extent to which universities, or at least their academic staff, were completely independent of outside control and influence in the past, before the State through its control of the purse came to encroach upon them, has been much exaggerated. With the exception of Oxford and Cambridge which, as medieval ecclesiastical foundations, were and are truly self-governing corporations of scholars entirely free of lay control, the vast majority of British universities, as we have seen, were established by local founders, either charitable donors or local authorities or both, and their successors, representatives and appointees were, as lay members of the universities' governing bodies, part of the autonomous chartered corporations, and, indeed, normally formed a majority of the supreme governing and executive bodies. In fact, in the nineteenth and early twentieth centuries when most of the older universities were founded, the standard model of university government was, significantly, very similar to the government of a contemporary joint-stock company, that other "Body Politic and Corporate with perpetual succession and a Common Seal" so typical of the age. Most civic universities were governed by a supreme governing body called the Court or Court of Governors (Conference in Scotland), which was in effect a meeting of the "shareholders", the benefactors, local authorities and other persons and bodies who contributed financial support. The executive body responsible for day-to-day management of the revenue, property and general conduct of the university's affairs, in effect the board of directors, was the Council (Court in Scotland), which consisted of certain *ex officio* members representing dominant financial interests, with the rest elected by the Court. Beneath these came the Senate (Academic Council in Scotland), responsible for academic matters, consisting principally of the Professors, at a time when the bulk of the academic staff were Professors, and the very few non-professorial staff were chiefly temporary assistants, demonstrators, and the like. Responsible to the Senate were the Faculties, consisting normally of all the permanent teachers of groups of subjects. There was usually no mention of Departments and the like, since a subject was normally taught by a single Professor with one or two assistants, if any. In such an organisational structure the real governing body, as in a joint-stock company, was the board of directors, the Council, with its overwhelmingly lay majority, since the Court, like the share-holders, generally met only once or twice a year to receive a report and re-elect the same managers. Academic freedom at that time meant freedom from the harsher forms of local lay interference with specifically academic affairs, such as the appointment and promotion of staff, technically the responsibility of Council but normally left to the Vice-Chancellor and Senate with the help of outside academic assessors. As an earnest of good faith and relations between the two levels, a small number of the Professors, along with the Vice-Chancellor, sat on Court and Council, in a role similar to that of executive directors in the joint-stock company.

On the whole, the system worked well, with forbearance and sympathy on both sides, until the expansion of the civic universities between the World Wars and still more since the Second War. Then with the huge rise in costs and in State support and the enormous increase in student and staff numbers, two major tensions began to pull the larger civic universities apart. One was the tension between all the academic staff on the one side and the local lay members of governing bodies on the other, who still controlled the purse strings although they no longer filled the purse. The other was the tension within the academic staff, between the Professors, who had shrunk from a majority to a tiny minority of the faculty, but retained all the academic power in Senate, and the now large majority of non-professors, who did most of the teaching and research but had, under Charters and Statutes which scarcely recognized their existence, hardly any rights or powers at all. More recently, one should add a third source of tension. the demand by the students for a larger share in the running of universities, which has become more importunate within the past few years. All these demands, and especially the first two — since the third has only just begun to influence constitution-making — led to a movement for the reform and reorganisation of university government, which took the form of agitation within universities for the re-writing of the Charter and Statutes, of pressure from academic staff in general and non-professorial deputations in particular upon the UGC in their quinquennial visitations, and of pressure at the national level through the Association of University Teachers upon the UGC and the Privy Council. As a result Charters and Statutes have been and are being revised in the older universities, with larger academic, including non-professorial, representation on Court and Council, new or enlarged representation for the non-professorial staff on Senate and, where appropriate, on Faculties, the institution of Departmental Boards open to all members of staff in the subject, and in some cases the institution of an Assembly at which, at least once a year, all members of staff can hear a report from the Vice-Chancellor and discuss and express an opinion on any matter concerning the affairs of the university. In some of the more recent Charters and Statutes concessions have also been made to the demand for student representation, at least on Court, and often on certain Council and Senate Committees concerned with student affairs, welfare and discipline.

In tune with these developments, in which to its credit it played a considerable part, the UGC looked to the New Universities for experimentation not only in academic matters, the broadening of curricula, the breaking down of departmental barriers and the like, but also, indeed primarily, in university government:

> Firstly, we felt that the normal pattern of university government required adaptation to modern circumstances. We thought that, for national institutions, there was still too great a tendency to look to local rather than regional sources for lay help in the higher levels of university government (e.g. the Court and Council); that some of the higher bodies, particularly the Courts, could be reduced in size and their spheres of influence diminished; that staff representation on Senates and Councils was still too hierarchical and greater provision should be made for the representation of non-professorial staff on these bodies; that, with the recognition of the growing need of undergraduates for help and guidance in non-academic matters, those who accepted responsibilities for 'pastoral' care, such as wardens of halls of residence, should have some representation by right in academic councils such as Senates.[*]

Apart from the last point which, written in 1964 before the latest wave of student unrest, has made it clear that students want to be represented by themselves rather than by father-figures chosen from amongst the staff, this is a very liberal statement of the latest and most advanced views on university government. The next paragraph, however, hints that the New Universities have not lived up to the UGC's expectations in their chosen forms of government:

> While all the new universities intend to follow the orthodow pattern by creating a Court which consists of very large numbers of local representatives — an indication of the importance which they attach to the maintenance of local interest in their universities — they have limited its field of responsibility; and they have gone some way to achieve wider representation of academic staff on matters of academic

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[*] UGC, *op. cit.*, pp. 104–5.

> governance, either through greater provision for non-professorial representation on various bodies, or through the introduction of new bodies such as a General Board consisting of the academic staff as a whole, or both. They have also given wardens or their counterparts representation on the Senates. On the whole, however, we should have welcomed in the statutes of the new universities some greater changes in the system of university government.

And they go on to instance the giving of junior members of staff some responsibility for the administration of small units, corresponding to departments in the older civic universities.*

It is a well-known fact that universities, like States, are not governed precisely as is laid down in their written constitutions, and both Sussex and Lancaster are already seeking to revise their Charters and Statutes to bring them into line with their actual practice, but it is worth looking at the Charters of the New Universities, and the Statutes and Ordinances made under them, to discover how far, if at all, and why, they departed from the orthodox pattern; and, when they retained some of the outmoded features criticised by the UGC, why they did so. All of them, it is true, retained a very large Court (or Conference in the case of Stirling). Some of them – York and Kent as well as Keele, which belonged to an earlier, unquestioning generation – even retained it as the supreme governing body, but most restricted its functions to receiving annual reports on the working of the university, discussing its affairs and conveying opinions on them to Council and Senate, and sometimes appointing the Chancellor and other honorific officers. The restriction of function was a recognition of the facts of life: as supreme governing bodies Courts were unwieldy, time-consuming and poorly equipped for effective control, and would have made an intolerable mess of governing if they had tried it. Their main function, like that of the shareholders' meeting, was as a last resort when University Affairs went wrong – but by the time a university Court came to remedy them it would be too late. Why then retain it at all, especially as a large body, generally of 200–400 persons, representative of ever-widening circles from the academic staff through all the local government authorities to national professional bodies and churches, such as the Royal Society or the Moderator of the Free Churches? The answer lies in the changing nature of the universities' relations with the community. In the old days the civic university belonged in a very real sense to the citizens of the local community, who provided most of the money for its activities, and were felt to be entitled to know and even to help determine what those activities should be. Today that relationship is out of date, but the university still belongs to the wider community of the nation, it still wishes as wide and representative a part of the nation as possible to know and take an interest in its affairs, and, most important of all, it wishes them to act in turn as *its* representatives in the community at large, able to speak for and defend it out of their own knowledge and experience. Hence the need for a large Court, not so much of "governors" but of "friends of the university", scattered throughout the community. And hence too the need for a large academic representation on the Court, so that the friends can actually meet some of the teachers and researchers and discover for themselves what they do.

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* *Ibid.*, p. 105.

The point becomes even more important at the second level, that of the Council (Court in Stirling), the real executive governing body and, in most of the New Universities, the supreme governing body. This is usually a small body of from 25 to 40 persons, including the Chancellor, Vice-Chancellor, and their deputies, together with a majority of lay members representing important outside bodies, notably the local authorities, and/or the Court, together with a minority of academics, including a still smaller minority of non-professors. It is generally responsible for the management and administration of the revenue and property of the university and for general control of its affairs, including appointments and dismissals, academic and non-academic, buildings, purchase of equipment, and everything else except the purely academic matters of curricula, examinations, and the like. Many academics, with a nostalgic glance at Oxford and Cambridge, have argued that only they are sufficiently knowledgeable and expert to know what is good for the university, and that they should be in a majority on the governing body. But it has been forcefully argued on the other side that the only guarantee to the public and the State that the university is performing its job properly and spending public money wisely is a lay majority on the Council. The almost certain alternative to this group of experienced, sympathetic and persuasible local business and professional men would be some form of Government inspection and control. The New Universities have wisely chosen lay majorities, though significantly rather narrower majorities than is common in the older civic universities: from six to thirteen academics, plus the Vice-Chancellor and his deputy, in a Council of 25 to 40.

All except York have also chosen to have a Senate (Academic Council in Stirling), but by no means all have chosen to have the traditional form of Senate consisting, besides the Vice-Chancellor, of all the Professors, plus a number of *ex-officio*, elected and co-opted non-professors. In a large university the Senate can be as large as the number of Professors plus 20 to 50%, say 150-200 persons in a university of 10,000 students, and clearly too large to discuss and determine detailed academic policy. East Anglia, Essex and Warwick — the growth-minded universities — have therefore followed the recent precedent of the University of Newcastle-upon-Tyne and adopted a select Senate, roughly the same size as the Council, and consisting, apart from the Vice-Chancellor, of the Deans, Chairmen of Departments, and/or a number of elected professorial and non-professorial staff. It has been argued that, since Professors expect to be on Senate, it is difficult to recruit them to universities where they have to stand for election to it, but this is not borne out by the experience of East Anglia, Essex and Warwick. A more pertinent argument is that a large Senate helps communication within the university by widely disseminating all the relevant papers and providing a forum for "feedback" or criticism from below, while its disadvantages can be remedied by a standing or steering committee which is in effect a small, elective, executive Senate. This solution has been adopted at Manchester, the largest of the civic universities, and something like it, with a Planning or Development Committee, is already developing at Sussex and Lancaster.* Efficiency is not necessarily confined to the rapid despatch of business: the consultation and acquiescence of interested parties may be just as important. For this reason, too, the New Universities have made generous provision for non-professorial representation on Senate. Keele led the way in its second, 1962, Charter, with a non-professorial membership equal to one-third of the Professors, and the rest, with one exception, have followed a similar pattern.

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* Under its amended Charter, Lancaster is to have a select Senate consisting of Heads of Departments plus representatives of the non-professorial staff and of the students.

The exception is York, which is the only New University to break out of the orthodox pattern in the higher reaches of government. Below an ultra-orthodox Court and Council, it has established a two-tier academic authority, a Professorial Board, consisting of the Vice-Chancellor and all the Professors, and a General Academic Board, consisting of the Vice-Chancellor and his Deputy and not more than forty elected members of staff, of whom no more than one-fifth need be Professors. At first sight this seems a retrograde step, an attempt to bring back the old professorial Senate by the back door, but in practice, we are assured, it is the reverse: an attempt to limit the special prerogatives of Professors to questions of staff appointment and promotion, the only questions dealt with exclusively by the Professorial Board, while the General Academic Board is in effect an elective Senate, determining all other matters of academic policy, which are then automatically endorsed by the Professorial Board for recommendation to Council. If the Professorial Board disapproves of a proposal the accepted convention is that it does not reject or amend it, but merely passes it back to the General Academic Board for further consideration. There is a similar Professorial Board, in addition to an elective Senate, at Warwick, and at Stirling, as well as the Academic Council (or Senate), an Academic Board, consisting of the Principal, the academic members of the Court (or Council) and an equal number of Chairmen of Boards of Studies, which seems to perform the same function. Since it is generally agreed that the most important, if not the only, function which distinguishes Professors from non-professors is the making of appointments and promotions — and this only because they themselves can no longer benefit by them — the device of a separate body restricted to this one function seems to be a useful innovation. Sussex, however, would not agree with this: there, non-professors sit on appointment committees and, as Deans or Subject Chairmen, deal with promotions.

Three of the New Universities have bodies corresponding to the UGC's idea of "a General Board consisting of the academic staff as a whole". This is not a complete innovation, since something like it, in the form of a General Board of Faculties, can be found elsewhere. It has the merit of providing a formal channel of communication between the central authorities and the rest of the academic staff, which meets once a year to hear a report from the Vice-Chancellor and to air views and grievances. Significantly, it is the Universities with small, select Senates, East Anglia, Essex and Warwick, which have felt the necessity for such a formal body, called an Assembly or General Assembly. Elsewhere other, less formal arrangements, have been made for ensuring good communication upwards and downwards: informal meetings of staff addressed by the Vice-Chancellor once a year or oftener, the publication in senior common rooms of the minutes of Senate, Council and Court, the issue of handbooks concerning staff rights, responsibilites and conditions of service, and so on. None of these devices is new — indeed, they are often consciously imitative of those adopted in the senior administrators' or academics' last university — but they are no less valuable for that.

Most of the New Universities have made some concession to student demand for a larger say in university government. Several have provided for token representation of the Students' Union or Council on Court, the largest and least influential of the governing bodies, but only Sussex so far has agreed (early in 1968) to the representation of students on Senate and Council, though Lancaster is discussing it. Lancaster and East Anglia, however, invite student representatives into Council and/or Senate to discuss particular items which concern them — a move which, like that of Sussex, has had a remarkable effect for the better on staff-student relations — and practically all of them provide for student representation on university committees specifically concerning student affairs.* The latter provision, however, is not in itself an innovation, and its bearing on the role of students in the academic community and their participation in its government will be discussed in Chapter IX.

It is below the level of central government that the New Universities, ostensibly at least, begin to differ significantly from the old and from each other. Although several of the Charters — those of Keele, Sussex and Kent — speak of Faculties, only the last in fact uses that term in practice, and there, as we have seen, they operate like Schools of Studies, with common Part I subjects for all the students in each Faculty. All the rest manage their academic affairs below the level of Senate through Schools or Boards of Studies, or both as at Warwick, to which all the teachers of the relevant subjects belong. In practice the difference between these and traditional Faculties is difficult to determine. They are meant to be less permanent and more flexible, with overlapping membership, especially between Schools, and interchangeability of subjects, especially between Boards. To those with experience of traditional Faculties, with their overlapping memberships and mutual co-operation in the provision of service subjects, this seems to be based on an oversimplified interpretation of both old and new institutions, since the Faculties were and are more flexible than they are depicted, while the Schools and Boards of Studies conduct their affairs much more like Faculties than is often supposed in the New Universities. The Schools in particular, in spite of their overlapping membership, seem to consist of a core of subject specialists committed to a certain view of the educational objectives who tend to resist the introduction of new and "extraneous" subjects and especially the modification of the common courses. The Boards of Studies are more flexible, and can more readily accommodate new subjects, but only at the expense of fragmenting into the departmentalism of the traditional Faculty.

Departmentalism, in fact, is the besetting sin of the academic profession, whether in the old or the New Universities. It is easy to see why it should be so: a university teacher has invested an enormous intellectual and educational capital in his specialised subject, and to allow changes in or encroachment upon it by other specialists represents a threat to "property" which could render the investment obsolete and the specialist redundant, if not intellectually destitute. Indeed, the existing pattern of university subjects is due less to the logical or heuristic divisions of knowledge than, to what Mr. Charles Carter, the Vice-Chancellor of Lancaster, has called the "sociology of academic curricula", the complex process by which a "subject" becomes not so much a field of study as a social grouping of teachers and researchers: "The stronger the grouping is, the more people feel themselves to belong to a profession, which has the name of a subject, with clearly defined borders to draw against others." This is human, understandable and perfectly justifiable in so far as it enables the subject to be studied seriously and professionally by committed specialists. The danger arises when the grouping of specialists becomes so introverted that they can no longer co-operate with other specialists beyond their boundaries, use the tools and insights provided by them, or explore the borderlands in which the newest, most exciting and significant discoveries tend to be made. The hope which many found in the New Universities was that such mutual understanding and co-operation would be facilitated by the breadth and flexibility of their organisation, matching the breadth and flexibility of their educational aims. It is therefore necessary to ask whether that hope has been justified, or whether departmentalism in its more selfish and myopic form has begun to rear its unbeautiful head.

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* Since this was written, Lancaster has set up a Board of the Senate with student representatives, whose decisions are ratified by the Senate itself (pending revision of the Charter).

At first sight the Schools structure would seem to be the best safeguard against a departmental counter-revolution. In practice, however, two different and opposite threats have arisen in it. On the one side, where the School, as in the sciences at Sussex or East Anglia and in nearly all those at Warwick, is co-terminous with a "subject" or small group of closely related ones, the School itself tends to become a very large department — a "super-department" as the Dean of the School of Biological Sciences at Sussex expressed it. The difference, if any, is that the individual professors "do not have their own chaps", but this is based on the notion, outmoded in most of the older universities, that a department contains only one professor. The corresponding Dean in East Anglia believed that "the Schools system has broken down the barriers within Schools, but not so much between Schools." In Warwick, according to the Professor of English, "When we talk about Schools we really mean departments." On the other side, where the School groups together distinct and well-defined traditional subjects, as in the arts and social studies at Sussex, East Anglia and Essex, the danger arises that the subject specialists will come together to form *imperia in imperio*. To some extent this is inevitable, and even desirable: courses must be taught, examinations set and marked, ideas exchanged, and thought mutually stimulated. Without the mutual stimulus and encouragement of fellow-specialists the subject would die. Subject committees, formal or informal, within the Schools exist everywhere and tend to fragment the empire into competing feudal kingdoms. At Sussex, according to the Dean of Social Studies, the Schools system "was by no means the ideal achievement of the original idea." There had come with size increasing polarization between subjects, latecomers uncommitted to the Schools idea were harder to assimilate, and in practice "the contextual subjects are the only thing that really unites a School." At East Anglia, said the Registrar, "People of like interests, historians for example, get together and tend to become subdepartments by themselves." At Essex, where the Schools are divided into Departments, "the real power", said the Registrar, "is the Department."

At the non-School New Universities departmentalism is not consciously avoided, except in theory at Kent, where the Faculties are Schools in all but name, and according to the Vice-Chancellor "are not departmentalized." Yet even there Part II of the first degree and all post-graduate work come under traditionally named subjects, and the academic staff are listed in the Prospectus by subject groups within each Faculty. So far all decisions appear to be made at Faculty level, but how long this will survive the expansion of staff numbers remains to be seen. The extent of departmentalism elsewhere naturally depends less on organisational structure than on the breadth and interdisciplinary character of the first degree, which imposes varying obligations of co-operation between Departments. At Keele, it is claimed, the autonomy of Departments is limited by the fact that none of them can command the whole time of any single student; on the other hand, according to the retiring Vice-Chancellor, "Each Department pursues its own steady course through the kind of syllabus it would if it alone were interested in the student. There is a certain degree of working together, but it is very slight." At the other end of the spectrum, departmental York has Boards of Studies, but they are not quasi-faculties as at Keele or Lancaster, but groupings of teachers for each degree course, whether in a single or a joint-subject degree. In other words, they are to all intents and purposes departmental boards. In between the two, Stirling tries to avoid departmental demarcation within its Boards of Studies, but provides in its Charter for formal "Subject Committees" each chaired by a Professor, which are departmental boards in all but name, while Lancaster has Departments with official Heads as formal as in any civic university. In the latter university the Boards of Studies are as much federations of sovereign Departments as are traditional Faculties. When challenged in the Board on a question of departmental assessment one professor considered it "outrageous" that one Department should interfere in the internal affairs of another!

The real test of any administrative structure is where the centres of power and initiative lie, and this to a large extent can be gauged from which offices are occupied by the men of highest power, rank and pay. The Schools are still the centres of power in Sussex, East Anglia and Warwick, since the Deans or Chairmen are usually the highest paid and most powerful professors, though in Sussex two of the Deans are non-professors. In Warwick, it is true, the first Chairman of the School of Molecular Sciences has stepped down in order to concentrate on persuading his colleagues, "by intellectual superiority", to work more closely together, but this does not detract from the point that both the (higher) Boards of Studies (for arts and sciences) are chaired by non-professors, and there is no other institution competing for power. In Essex, however, while the Deans are all professors, in three out of four cases they are second professors in their Departments, and the real power and initiative lies with the departmental Chairmen. In the non-School universities the Heads or Chairmen of Boards of Studies tend, as at Lancaster, to be drawn from the non-professorial staff or from second professors of multi-professorial Departments – a certain sign that the job is regarded as a chore rather than a position of strength.

One of the defects of university government everywhere in Britain is the heavy burden it places on a few senior academics, mainly chosen for their ability in teaching and research, yet subjected to a weight of administrative responsibility which prevents them from adequately performing their primary function. The cynics say that administration is an escape for the exhausted and the indolent from the far more exacting work of scholarship, and that the fuss which professors make about being put on a committee is as nothing compared with the fuss they make when taken off it. Yet on the whole most senior academics genuinely want to spend more time on "their own work", as they call their research, and mixed with the usual power-seeking and empire-building motivations of administration there is a genuine desire for the good management of their subject and of the university, and a determination to keep academic decisions in academic hands and out of those of professional administrators or lay amateurs. The burden of administration is the price willingly paid for academic autonomy. The New Universities have carefully preserved this tradition of academic control of academic decisions through their orthodox system of committees, usually committees of Senate and joint committees of Council and Senate, which control everything from refectories and student discipline to academic planning and building development. On the whole they have taken pains to spread the load by extending committee membership where relevant and possible to non-professorial staff and even to students, but it is still inevitable that the largest burden, especially in the central committees responsible for appointments and promotions, planning and development, and relations with students and non-academic staff should fall upon a few. It is important therefore that the few who sit on these key committees should not also be burdened with offices which in themselves would tax the strength of one man. Unfortunately the Schools system seems designed to do just this. The Deans in Sussex and East Anglia and the Chairmen of Schools in Warwick are overburdened figures who spend as much as 50% of their time on administration. In the words of a Sussex Dean "they have too much work and too much power." This is tolerable only when the tenure is short-term, and the incumbent can take a well-earned recess, and preferably study leave, at the end of, say, four or five years. The need for rotation has been recognized, formally at Essex and Sussex, informally elsewhere, but it takes a large-minded academic to step down from a position of power and prestige, and, although a few have already shown themselves willing to pay the price, it remains to be seen whether the Schools system will not provide an ideal habitat for administration-avoiding professors at the cost of stultifying the professional work and reputations of the few Deans.

Another by-product of the Schools system, or strictly of the non-collegiate system, is the still greater burden it places on one particular Dean (or equivalent officer), the Dean of Students at East Anglia and Essex, the Senior Tutor at Sussex. The channelling of all student problems and grievances through one central official is bound to throw upon him a burden of responsibility which, as the university grows, will consume his whole time and energy. The Senior Tutor at Sussex still managed to teach but could research only in his periodical spells of study leave. The retiring Dean of Students at Essex, already a busy Chairman of Department, spent 80% of his time on the job, and a new one could be found only by promising him the assistance of a full-time administrative officer. The Dean of Students at East Anglia carried "an intolerable burden" and thought that the office would have to become a full-time one. Whether, in spite of the immense effort and skill brought to the job, it can in any sense be considered a solution to the problem of maintaining good relations with the students, we shall have to consider in Chapter IX.

The collegiate New Universities solve this problem by breaking up the staff and student bodies into more manageable units, and multiplying the channels of communication. Even this system is not without its problems and costs, however. Students today are particularly sensitive to the fear of being "divided and ruled"; and there is also a perpetual tug of war between the college junior common rooms and the central, federal student organisation over finance. But more of this in its proper place. From an administrative point of view the collegiate system adds another tier of staff representative institutions, additional to the academic Boards of Studies, below the level of Senate: College Councils at York, Senior College Committees at Kent, College Syndicates at Lancaster. These in turn generate joint committees of Colleges or their Heads on one side, and joint committees with the student representatives of the junior common rooms on the other. This proliferation of representative bodies provides a second channel for discussion, participation and complaint, alternative to the academic channels of communication: no-one at Lancaster, York or Kent can complain of not having a forum in which to air his views. But this also increases the number of meetings each member of staff has to attend, to the detriment of other duties, especially research. On balance the staff, especially the junior staff, seem to favour the system rather more than do the students, since it provides a centre for non-academic discussion and social recreation often lacking elsewhere.

The professional administration of the New Universities is uniformly orthodox, principally because the task of building a new institution on a virgin site is sufficiently innovatory without experimenting at the same time with old, tried and familiar methods of management. All the Academic Planning Boards without exception looked for a Vice-Chancellor as the chief administrative and academic officer. Below him they tended, except at Sussex, to avoid the old duumvirate of a Registrar responsible for academic matters and a Bursar responsible for finance, and to follow the more recent practice of appointing instead a single officer, a Secretary or Registrar (or sometimes Secretary/Registrar) responsible to the Vice-Chancellor, somewhat like the Permanent Secretary of a Government Department responsible to the Minister for all aspects of administration. Beneath him there tend to be three officers of deputy status, responsible respectively for academic affairs, finance and buildings, with considerable powers over their own staffs. The administration tends to be centralized, with whatever staff is needed as secretaries to Boards of Studies, College bodies, and the like, loaned out to them on a part-time basis. Occasionally a School or a large Department will make out a case for a separate full-time administrator, but this arrangement remains unusual, except at Sussex and East Anglia where each School has its own Administrative Assistant, responsible jointly to the Dean and the Registrar.

Much depends in this system on the personality and interests of the Vice-Chancellor. Some, such as Dr. Templeman at Kent or Dr. Sloman at Essex, are in the tradition of the business tycoon, closely involved in all decision-making and delegating as little as possible. Others, such as Lord James at York or Dr. Taylor, late of Keele, are somewhat Olympian figures, delegating as much as possible to their senior officials, and descending only when necessary to intervene in major policy making. Still others, such as Mr. Carter at Lancaster or Mr. Butterworth at Warwick, are *primus inter pares,* leaving the running of Departments and Schools to the "good men" they have put in charge of them, and concentrating on the next phase of development of the university. Which vice-cancellarial style will be most successful only the future progress of the New Universities will tell.

For the rest, the management of the New Universities displays few innovations. Sussex has perhaps been most consciously professional, centralizing such matters as the procedure for selecting students (and sending a deputation to the USA to study American methods), issuing an annual guide to the organisation of business, and inviting in a commercial firm of business consultants, McKinsey and Co., to report on their organisation and methods. Others such as East Anglia, Essex and Lancaster, periodically review their organisation and committee structure, and attempt to simplify and streamline it, but the pull between the efficiency of swift and economical decision-making and, in the academic world, the more vital efficiency of consultation and consent inevitably inflates as much as it deflates the system. Essex claims to have found a solution in what amounts to a series of one-man committees, by "getting decision-making done by an elected person who can be changed", such as the Dean of Students. But the ordinary committee, with its confrontation of minds, experience and interests and its sharing of the burdens of responsibility, is too useful a device and too deeply entrenched in the British academic way of business, to be lightly dropped.

The New Universities are as keenly interested as any in new, more efficient and economical methods of business. Led by Lancaster and York, they have all joined in the relevant regional consortia of universities which are employing experts to study their organisation and methods. The Vice-Chancellor of Lancaster chairs the sub-committee appointed by the Committee of Vice-Chancellors and Principals to study university productivity through the utilization of capacity, in the form of buildings and equipment, which is attempting to evolve standard measurements of such items as the number of class-hours per lecture room per week and the weekly number of student hours per seat, with a view to establishing comparable norms.* Practically all New Universities have put their financial accounts, payment of salaries, and student records on their computers. But none of these things is new and/or peculiar to the New Universities. If a reason for their administrative conservatism is required, it will be found in the adage of George Bernard Shaw: if you want to advocate unconventional ideas, do it in conventional clothes.

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* Cf. K.S. Davies, 'University Productivity: the Use of Capacity', *Background Papers of the Universities Spring Conference, 1968.*

VI

THE RECRUITMENT AND STATUS OF THE ACADEMIC STAFF

The recruitment and status of the academic staffs of the New Universities are dominated by the fact that in Britain the remuneration and conditions of service of university teachers are practically uniform in all universities, apart from Oxford and Cambridge. In the latter most of the academic staff, whether or not they hold teaching appointments with the University, are fellows of Colleges which, as endowed corporations not subsidized by the State, are not bound by UGC salary scales. Most Oxford and Cambridge dons, therefore, are paid two salaries, one by their College and one by the University, only the latter being amenable to the direct influence of the Government. Conditions of service there, too, are independent of the rest of the system, since both University and College are autonomous institutions without any element of lay representation or control (beyond that exercised by periodic Acts of Parliament and executive Royal Commissions), and the teachers of the University and the fellows of the Colleges are in effect self-employed, self-governing and self-perpetuating societies, with collectively administered security of tenure.

Elsewhere, however, salary scales for the various main grades of staff – professor, reader, senior lecturer, lecturer and assistant-lecturer – are fixed by the Government (currently on the recommendation of the National Board for Prices and Incomes and promulgated by the UGC, though the placing of individual teachers within those scales is left to the appropriate authority, normally the Council, in each university, except that the numbers in the senior grades of professor, reader and senior lecturer must not exceed 35 % of the total academic staff in the institution. The permitted scales are as follows:

	£
Assistant Lecturer	1,105 x 75 to 1,180 x 80 to 1,340
Lecturer	1,470 x 90 to 2,010 x 85 to 2,180 x 90 to 2,630
Senior Lecturer and Reader	Varying minima and maxima up to 3,415
Professor	Minimum 3,570, maximum 4,990, average at each institution not to exceed 4,410.

The professorial salary is on a range, not a scale, and each individual is placed on it at the discretion of the university, with no necessary or automatic entitlement to annual increment. All universities receive a sum for this purpose calculated from the average (£4,410) multiplied by the number of professors. Some, such as Oxford and Cambridge, use the so-called "professorial spread" to pay all the professors more or less the same salary; others, such as Manchester and most of the larger civics, to pay those in the "scarce" subjects, such as the technologies, above the average, at the cost of paying arts and social studies professors below it; still others, such as some of the smaller civic, and all the universities outside Oxford and Cambridge to some extent, to give increases for long or meritorious service. The rest of the grades are on salary scales, with annual increments as indicated, which are normally automatic except where, as in the lecturer grade everywhere and in the senior lecturer grade in many places, there is a "merit bar" at one point in the scale which requires a Council decision, similar to that for promotion, to pass. Senior lecturers are usually promoted or appointed at a salary above the lecturer's maximum and proceed to an increment or two below the absolute maximum (£3,415), readers slightly higher and finish at the maximum. In addition, under a scheme begun in 1947 and now being phased out, staff appointed to a particular grade before 1 January 1965 receive family allowances of £50 per child under school age or in full-time education, though they lose this on promotion to another grade; and London staff receive a special allowance for the extra costs of metropolitan housing and travel, of £100 for professors, £80 for readers and senior lecturers, and £60 for other staff. All these salary scales, which, apart from a 5% increase in 1966, are the result of a full investigation and report by the National Incomes Commission in 1964,* are now under revision by the Prices and Incomes Board, which is considering a claim by the Association of University Teachers for a increase of 15%.**

In addition to the main grades there are also a number of subsidiary ones, of two distinct kinds: *1*) research fellows, officers or associates, whose duties include little or no teaching, but who are normally paid on the same scales as the main grades; *2*) a host of "unofficial" grades paid below the assistant lecturer level, called demonstrator, research assistant, tutorial assistant, or some similar title which have crept in as the pay and status of assistant lecturers have risen, to take over certain routine or ancillary duties of an academic rather than clerical or technical sort, and which are difficult to classify because many of them are part-timers or post-graduate students eking out their grants. A further peculiarity of British universities is that a large part of the senior administrative and library staff, practically all those with degrees, are paid on the academic salary scales and have substantially the same conditions of service, so that the term "university staff" is often taken to include these.

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* National Incomes Commission, *The Remuneration of Academic Staff in Universities and Colleges of Advanced Technology* (HMSO, London, Cmnd. 2317, 1964).

** Association of University Teachers, *Memorandum on Salaries in Universities* (1967); claim raised from 10 to 15% at AUT Council meeting, December 1967. The P.I.B. has since reported, and awarded increases of from 8% for lecturers to 4% for professors, half of which was to be paid in the form of "merit" or "distinction" awards (a principle rejected by the AUT and the Vice-Chancellors, and now partially amended by the Government.

Conditions of service are nominally at the discretion of each university, but in practice these are also fairly uniform, since the UGC sets up expectations about probation, promotion, tenure, and the rest, advises the Privy Council on the granting of Charters and Statutes and their provisions concerning contracts of service and procedures for appointment, retirement and dismissal, and makes financial provision through the Federated Superannuation Scheme for Universities for staff pensions (a scheme which is under review by the Maddex Committee, whose recent report invites the universities to choose between the FSSU insurance scheme and two kinds of terminal salary scheme).* Apart from the powerful pressure from the State, the intellectual labour market also makes for uniformity, since those universities which offer conditions of service and career prospects noticeably worse than the average find difficulty in recruiting staff. One of the chief features of status, security of tenure for example, differs little as between most universities. Most first appointments are in the assistant lecturer grade, which is probationary, and leads, if successful as it is in most cases, to promotion to lecturer after two to four years (normally after three). Most of the remainder are in the lecturer grade, which is also usually probationary for three years for a first appointment, and in some universities on promotion.** After successfully completing probation the teacher is normally appointed to the age of retirement (usually 65 or 67, but in a few places 70), and can confidently look forward to annual salary increases until he reaches the "merit bar" (where very few are ever halted) or the top of the grade. Nominally, it is true, he can be dismissed at three to six months notice, but in practice this rarely happens, and when it does there is now normally provision in university Charters and Statutes defining the reasons for which a member of staff may be dismissed, and laying down a procedure by which it must be done, usually including a right to be heard by the dismissing body, normally Council, or by a committee of Council and Senate, and a right of appeal to some higher body, either Council, Court or the Visitor, who is an exalted personage such as the Queen or the Archbishop of Canterbury.

In older Charters and Statutes these safeguards are often confined to the professorial grade, but in all recent ones, including those of the New Universities, they are extended to all academic staff. In Lancaster, for example, under Statute 18:

2. Any member of the University appointed to an office by the Council may be removed for good cause by the Council. No person shall be removed by the Council unless he shall have been given a reasonable opportunity to have been heard in person by the Council.

3. A person removed by... the Council may appeal to the Visitor (H.M. the Queen), whose decision shall be final.

4. "Good cause" when used in reference to removal from office, membership or place, means:

a) Conviction of any criminal offence judged by the authority vested with the power of removal to be such as to render the person concerned unfit for the execution of the duties of his office or place.

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* Department of Education and Science, *University Teachers' Superannuation* (Report of a Working Party, Chairman Sir George Maddex, HMSO, London, 1968).

** The P.I.B. has recommended the abolition of the Assistant Lecturer grade, all first appointments to be as lecturers on probation.

b) Failure through mental or physical capacity or persistant neglect to perform properly the duties of his office or place.

c) Conduct judged by the authority vested with the power of removal to be of an immoral, scandalous or disgraceful nature and to be such as to render the person concerned unfit to continue to hold his office or place.

d) Conduct judged by the authority vested with the power of removal to be such as to constitute failure or inability of the person concerned to perform the duties of his office or place or to comply with the conditions of his office or place.

5. Subject to the terms of his appointment no officer of the University shall be removed from office save upon the grounds and in pursuance of the procedure specified in this Statute.

All the New Universities have Statutes in these or closely similar terms, for the simple reason that the UGC, through its advice to the Privy Council, insists on them. The safeguard, while effective — the more so in that it rarely needs to be called into operation — is not so protective as at first sight appears. The judgement of the UGC, and the reason for its insistence on the provision, is that it is a safeguard for the university rather than the individual, to be called into operation as a last resort in cases where an unsatisfactory teacher refuses to resign, and may then be offered the alternative of an investigatory hearing with its threat of exposure and consequent damage to the individual's reputation and career. Be that as it may, the Association of University Teachers has extensive knowledge of cases where the threat of exposure has worked the other way, and deterred the university either from dismissing a member of staff or at least from doing so without substantial compensation.

For similar reasons, written contracts of service, the granting of which in every type of employment is now compulsory in Britain, are also much the same in all universities. Apart from salary, period of tenure, provisions as to notice, resignation and retirement, superannuation, and a limitation on outside work, they usually contain an extraordinarily vague clause about the duties expected from the university teacher. A non-professor will be required, in some such terms as the following:

> to undertake such teaching, examining and other duties as the Senate or the Professor of (the subject) may direct. He will also be expected to advance his subject by advanced studies or research, and he may be expected to supervise graduate students.

A professor's duties may be even more vaguely defined:

> to organise and administer (or, in a multi-professorial department, to assist in the organisation and administration of) the department, to undertake teaching duties and to conduct research.

The vagueness arises from the impossibility of closely defining what university teachers actually do — an impossibility not confined to them, but characteristic of most of the learned professions, in which a "fiduciary" element operates, such that the client or employer has to take on trust the expert skill or service. In practice the duties of university teachers can be defined only operationally, by what successful academics of good standing and repute do, and the performance of individuals, for the purposes of appointment, promotion or dismissal, judged by comparison with them.

All this means that the New Universities are not and cannot be free to experiment and innovate in the recruitment and treatment of teachers, at least outside very narrow limits. When they were first mooted, two opposite fears were expressed concerning recruitment. On the one side it was feared on behalf of the New Universities themselves that new institutions of low prestige and few facilities for library or laboratory research, or even for the intellectual stimulus of numerous colleagues, would fail to attract the staff, especially the professorial staff, of adequate calibre to build powerful centres of learning and scholarship. On the other side it was feared, particularly by the Vice-Chancellors of several of the larger civic universities, that the New Universities would attract away able tachers and scholars, especially of the age and rank just short of professorial, needed for their own expansion. This was at a time, too, when the Robbins Committee and the UGC were expressing fears that the biggest single obstacle to the projected expansion of student numbers was the potential shortage of university teachers. The Robbins Report pointed out that, to meet its recommended target figures, the number of university teachers would need to rise from 16,750 in 1962–63 to 45,000 by 1980–81, while the UGC in its 1964 Report calculated that the proportion of university graduates entering the profession each year would have to rise from the existing 10% to over 13% to meet the targets of 1966–67 and 1973–74,* figures which, if the calibre of the recruits was to be maintained, implied a rise from about 40% to about 52% of the first and upper-second class honours graduates.

In the same report the UGC expressed concern – apart from the question of whether salaries, then being reviewed by the National Incomes Commission, were sufficiently attractive to sustain an expansion of this magnitude – on two other scores:

> Firstly, we believe that career prospects in the universities have become worsened since before the War by the relative reduction in the proportion of higher-paid posts... Our second concern arises from the deterioration over the years in the ratio of students to staff.**

On the first point, the ratio of professors to non-professorial staff had worsened from 1: 4.12 in 1938-39 to 1: 7.40 in 1961-62, while the limitation imposed since 1947 on the proportion of senior lecturers and readers to others (2: 8 until 1958, 2: 9 until 1967, when the 35% rule, including professors, was introduced) further diminished career prospects. On the second point, the ratio of staff to students in the "full-time teacher" faculties of arts, social studies, pure and applied sciences, which had slightly improved from 1: 7.9 in 1938-39 to 1: 7.6 in 1954-55, had deteriorated to 1: 8.4 by 1961-62. If we allow the UGC's higher weighting to the more time-consuming post-graduate students (3 to science post-graduates, 2 to arts and social studies), then the deterioration becomes sharper: 1: 10.5 in 1938-39, 1: 9.3 in 1954-55, 1: 10.9 in 1961-62. (These ratios, which are generous by Continental and American standards, will be explained below in the section on Teaching Methods and Assessment, Chapter VIII, in terms of the small-group teaching and the shorter degree courses which are features of the British system.) Both the worsening of promotion prospects and the increasing burden of teaching were added reasons for fearing a shortage of high calibre staff for the New Universities.

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* *Robbins Report*, p. 174; UGC, *op. cit.*, p. 152.

** UGC, *op. cit.*, p. 149.

On the other hand, there is little doubt that the UGC hoped that the New Universities would give a "shake-up" to the system in the matter of staffing. In the 1950's, certainly, there was a feeling of stagnation in the older universities, a lack of mobility either up the scale or between institutions, which was due partly to the comparative stability of student numbers and partly to the common policy, under pressure from the AUT seeking promotion by seniority for its members, of replacing retired or transferred senior non-professorial staff by assistant lecturers. Consequently, there was very little movement between universities below the level of those moving to chairs. The renewed expansion of the 1960's would in any case have created more employment opportunities and some consequent mobility, but only the creation of new institutions, or at least a proliferation of new departments, could have created so many new posts at senior levels. The UGC, in commenting on the need for more professorships and the tendency of the departmental system to restrict their number, specifically welcomed the experimentation in the New Univeristies with more flexible forms of organisation which would allow more professors who were not necessarily heads of department.*

In the event, the UGC's hope proved stronger than the fears. The New Universities, by creating more chairs and senior posts than any comparable expansion of older universities which tended to grow from the bottom rather than from the top, helped to start a movement of staff both up and across the system which set up repercussions throughout the university world, and indeed outside it. Not merely were senior non-professorial staff elevated to chairs earlier than they otherwise would have been, but in many cases existing professors, including some senior ones, were attracted away from the civic universities and from universities overseas, together with some senior fellows of Oxford and Cambridge who would never have moved to an "ordinary provincial university", and, especially in the newer technologies such as systems engineering and operational research, men from the business world as well. This in turn made way for replacements and promotions in their former universities which, together with the general expansion, collectively have had the effect of reducing the average age and increasing the drive and energy amongst the leaderships of many universities, very like a sudden transfer of power from one generation to another. In the New Universities themselves the average age of the professoriate is still lower, and the energy and drive noticeably higher. Not one of the new institutions complains of any difficulty in recruiting staff, either at the senior or the junior level, except in one or two particularly "scarce" subjects, such as mathematics, economics or sociology, where the demands of industry and Government and rapid expansion everywhere have caused demand to outpace supply.

The actual numbers of full-time staff in 1966-67, the last year for which complete figures are available from the UGC, are set out in Table 7.

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* UGC, *op. cit.*, p. 145.

Table 7. NUMBERS OF FULL-TIME ACADEMIC STAFF, 1966-67

	Professor	Reader and Sr. lecturer	Lecturer	Assistant lecturer	Other	Total
East Anglia	22	18	72	44	14	170
Essex	13	15	55	23	6	112
Keele	20	29	90	31	32	202
Kent	19	20	58	36	2	135
Lancaster	18	19	69	43	4	153
Sussex	44	57	175	98	–	374
Warwick	17	24	47	42	5	135
York	19	30	91	18	6	164
Total	172	212	657	335	69	1,445

Source: Statistics supplied by Mr. R.C. Griffiths, Deputy Secretary of the U.G.C. The "Other" category is a residual one, consisting only of those members of staff who cannot be allocated by equivalent salary to the first four categories; it mainly comprises, therefore, Demonstrators, Research Assistants, Tutorial Assistants, and the like, on salary scales below that of Assistant Lecturer.

Stirling and Ulster were not then open to students and their staffs were not included in the official returns, but their current Prospectuses give 52 (including 14 professorial) and 18 (all professorial) academic posts respectively. Kent and Warwick were still in their second year, without the full complement of staff for the three-year under-graduate course, while all the rest except Sussex had not yet reached their short-term target of about 3,000.

Nevertheless, the growth rate during the present quinquennium will be slower for most of them than that of the early years, and one might hazard a prediction that by the end of it total staff will be in the order of 2,500. In short, only about one university teacher in fifteen is now in a New University, and less than one in ten will be there in 1972. This in itself is an effective answer to those pessimists who thought that they either would not be able to recruit sufficient staff of adequate calibre or would in so doing seriously weaken the older universities. An addition of 204 professors (including those at Stirling and Coleraine) to the country's stock of 2,404 in 1965-66 is hardly a strain in an expanding university system, especially one in which promotion had previously been artificially restricted. Whether they and their non-professorial colleagues were as well-qualified as elsewhere it would not without an elaborate survey be possible to say: certainly, their academic degrees were as numerous and weighty.

Three other points are worth noticing in passing. One is that the faculty "mix" as revealed in the UGC statistics is not worth the elaborate tables needed to delineate it here, since it is much the same as in the older universities, except for the small proportion of teachers in applied sciences and their absence in medicine, dentistry, architecture (save in the York Institute of Advanced Architectural Studies), agriculture and veterinary science. The second is the comparatively small number of women staff.

There are in the most recent Prospectuses only four women professors and 146 non-professorial women staff in the ten New Universities, ratios of about 2% of professors and less than 10% of all academic staff.[*] This is almost exactly the same as the national average, which is slightly higher than that of most other Western countries.[**] The problem of unequal academic opportunities for women is common to the Western world: in Western Europe the proportion ranges from about 1.5% in Germany and 2% in Italy to 8% in France, the Netherlands and Norway; in Australia it is about 1% of professors, in USA about 10% of university teachers, though half of these are in departments of home economics and teacher training; only in such countries as Argentina (29%), Rumania (31%), Thailand (37%), and the Philippines (38%) does it even begin to approach equality.[***] The reasons are too manifold to enter into here, but three which operate strongly within the British system are the small proportion of girls who enter the universities at all, the still smaller proportion who take post-graduate courses and qualify for university teaching, and the existence of equal pay which makes a man, who will not break his career to have a family, seem to many selectors a more permanent and reliable member of staff. All that can be said in this connection is that the New Universities are willing to employ women academics, but that they have found them very scarce amongst their suitably qualified applicants. A third point is the employment of foreign academics. In this, Britain, like other English-speaking countries, has an exceptional record, and an unusually large proportion of not only white Commonwealth and American academics but of academics of almost every nationality can be found as visiting or permanent staff in British universities.[****] To this the New Universities are no exception. Taking two of them at random, Essex has 19 members with foreign first degrees in a staff of 147, Lancaster 18 in a staff of 203, including countries of origin ranging from Australia, New Zealand and the USA to India, Japan and Argentina.[*****] In the School of Comparative Studies at Essex there are academics trained at Lisbon, Warsaw, Cordoba (Argentina), Mexico City, Paris, Yale (two), Stanford (California), and Kansas. In the Department of History at Lancaster there are teachers holding first degrees at Sydney (Australia), Auckland (New Zealand), Bowdoin (Maine) and Wisconsin.

There is in general, then, no shortage of qualified applicants: the New Universities, curiously enough, need and are able to be more fastidious than the old, especially in the choice of leading men in each subject, since the task of launching a new development and attracting an able team of assistants is far more exciting and exacting than that of taking over an ongoing concern. Although academics are notoriously difficult to evaluate, in one's own field let alone widely different ones — and, certainly, by the professorial level degrees and even publication lists can be fatuous irrelevancies — we could not in our visitations avoid forming the clear impression that we were dealing with a most remarkably able set of men, who knew exactly what they wanted to do and how to go about doing it.

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[*] Figures from current year's Prospectuses; including part-time and non-UGC categories.

[**] *Robbins Report, Appendix Three*, p. 172; women professors 2%, all women university teachers 10%.

[***] A. Hacquaert, ed., *The Recruitment and Training of University Teachers* (International Association of University Professors and Lecturers, Ghent, Belgium, 1967), pp. 36–7.

[****] *Ibid.*, pp. 59–66.

[*****] Figures from current year's Prospectuses; including part-time and non-UGC categories.

What attracted such men from comfortable, familiar routines in well-established universities with large libraries and laboratories, or from higher paid posts in industry, to the exacting, time-consuming, exhausting pioneering work of launching new developments in raw, new institutions on virgin sites with rudimentary facilities? For many, no doubt, ambition played a part, the financial reward and academic prestige of a chair. But this could not account for all, or in a certain sense for any, since chairs were now available elsewhere for the chairable. From conversations with a large number of them, two main motivations emerged, leaving aside subsidiary ones, such as the attractions of the surrounding countryside or the climate. The first was frustration with the existing academic situation, the inability to put new ideas, new courses, new subjects, new approaches to old subjects, new methods of dividing and re-integrating the seamless web of learning, into practice in their former institutions, or in any university organised on traditional lines. The Chairman of the School of Molecular Sciences at Warwick believed that "never in a thousand years" would he have been able to persuade Cambridge to admit such a degree course, and the Dean of the School of Comparative Studies at Essex said much the same thing about his combination of literature, government, art and sociology. The Vice-Chancellor of Sussex went to be Dean of Social Studies there from an eminent provincial chair because he could not redraw the map of learning at Leeds. And at least one social historian moved to Lancaster because he could see no future for his subject in the interstices of the Manchester history school. The second motivation was the mirror-image of the first, the opportunity to do just these things, to pioneer new ideas, new courses, new methods of teaching, new ways of educating the man rather than instructing the mind, which, in the (not necessarily correct) opinion of the pioneers, could be done only in the new institutions without the built-in frustrating mechanisms of the old. This, if anything, was the much-heard-of "glamour" of the New Universities — for what other glamour at the beginning had muddy foundations, uncomfortable temporary buildings, with every book and piece of laboratory equipment still to be bought? The Professor of English at Lancaster, who had held two chairs at overseas universities, went because he wished to teach language in a new way. The Professor of English at Warwick went because he did not want to teach language at all, but a new approach to literature, as did the Professor of Literature at Essex. The protagonists of new university subjects — operational research, business studies, marketing, systems engineering, conflict studies — or of comparatively neglected ones — African and Asian studies, East European studies, even higher education — or of new approaches to old ones — biological sciences, environmental sciences, engineering science — went not only because of the opportunity to teach them at all, but because they could begin as equals in a situation where all subjects were new. Others went because they liked what they heard of the College or the Schools system, because they liked closer relations with students or wanted to be professors without wasting their research talents on administration or because they liked administration and wanted to be Deans of Schools or Heads of Colleges.

What they could not have gone for, if they were not purblind or insane, was a quiet life and a light burden of work, for the teaching loads and administrative chores in the first few years of any New University are on a higher plane than anything at the old, since, however favourable the nominal staff-student ratio, the sheer number of lecture courses, committee meetings and administrative decisions required per staff member is out of all proportion to the small numbers available for them. Nor could they have gone for the stimulus of meeting large numbers of colleagues in their own discipline, since oftener than not they were the only specialists in their own immediate fields. Research facilities were not specially attractive in the short run except for those who enjoyed purchasing new equipment or library collections. Salary was a consideration only for those who could not get comparable posts elsewhere — to which of course no self-respecting academic would ever admit — although a few might improve themselves by becoming Deputy or Pro-Vice-Chancellors, Deans, or Heads of Colleges, posts to which the additional few hundred pounds a year are hard-earned indeed. Status and conditions of service are much the same everywhere, as we have seen, and though the New Universities are anxious to be model employers and to be generous with travel and research allowances, study leave, and so on, their purses are no more capacious than those of the old, and their ability to afford time off for staff probably less.

Altogether, there is no avoiding the conclusion that the New Universities' success in attracting staff of high calibre is due to the fact that they *are* New Universities, with all the opportunity for experiment and innovation which that means for the would-be pioneer. How long they will be able to provide the opportunity and retain the pioneering image remains to be seen. The senior posts of initiative and independent decision are now nearly all filled, there are no more new universities in the offing to provide more of them, and for the present quinquennium the general expansion of student numbers has for demographic reasons slowed down almost to stagnation. The signs are that, until the steep rise in the number of entrants is resumed in the mid 1970's, the New Universities will provide a large part if not most of the expansion of employment opportunities for university teachers. This expansion will inevitably now be at the junior rather than the senior level. It will give them the pick of the best young graduates, as is already evident from applications for posts in most subjects. It will for a time reinforce the atmosphere of youth and energy which characterizes them at junior still more than at the senior levels, but it will in time lead to frustrating promotion bottlenecks as young men approach the top of junior grades and find the senior ones blocked by men not much older than themselves. Those same senior men, the first pioneers, may become as conservative in the preservation of their once new ideas as the old order of professors in the traditional universities. There are already signs of tension between the "founding fathers" and later would-be innovators, notably in Keele and Sussex which have had time to reach the Oedipean conflicts of adolescence, but they are not absent in the youngest of them. Such tensions, however, are the dialectic of academic life, from which new ideas and higher syntheses grow. The New Universities, like the old, must learn to cope with their problems, above all with the immensely difficult but everlasting problem of transmitting power and initiative from one generation to the next. This problem is bound to become acute as they become first adolescent and then mature, and face the change-over from the founding fathers to the children " born of the revolution ". But by then they will no longer be New Universities.

There is one area of innovation of permanent attraction for good academic staff in which the New Universities have broken through to their own advantage: their considerable emphasis on post-graduate work and their comparatively high proportion of post-graduate students. They have proved that new institutions do not necessarily, like so many of the civic universities, have to spend long, if not interminable, apprenticeships as under-graduate teaching universities. From the point of view both of academic prestige and of attracting and retaining high quality staff, this is a crucial factor, and one which we shall discuss in the next chapter.

VII

TEACHING AND RESEARCH

Universities exist, we said in the Introduction, for the advancement of learning, the education of the young in the light of that learning, and as service centres for the spread of knowledge, the solution of problems, and the criticism of ideas and values. The first and part of the third of these can, in the widest sense, be called research (though a further large part of the third would include some extra-mural teaching and the like), while the second is the familiar process of teaching internal students. Teaching and research in this broad sense are therefore the two major "products" of universities. Educated students and the published papers and industrial, social and administrative applications of new knowledge, and so on, are their economic "outputs", the goods for which society and the State are prepared to pay so highly in the form of the "inputs" of academic and ancillary staff time, the capital cost of land, buildings, books and equipment and the cost of their organisation in a viable unit of production* – to which one should add the cost of the maintenance by the State and the parents of the students themselves. The problem of measuring the output and productivity of universities is not merely that only the first product, graduates of various kinds and levels, can be counted and measured, while the second, the output of new knowledge and the re-thinking of old, cannot. Indeed, it is doubtful whether the first output, of "completed students", is as measurable as it superficially appears: the product is so variable and its quality can change so dramatically over time that we can never be sure that we are counting and measuring comparable goods. The real problem, in fact, is connected with that difficulty, since the quality of the students depends, in large part at least, on the quality of what they are taught, and this in turn depends on the amount and quality of the study and research which underlie it.

For students come to a university not just to learn what is already known from men who have finished learning themselves, but to learn how to think for themselves about knowledge which is still growing from men who are working at its frontiers. It was well said by the first Principal of Owens College, Manchester, that

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* Cf. C.F. Carter, 'The Productivity of Universities: an Economist's View', *Universities and Productivity: Background Papers of Universities Spring Conference*, 1968, p. 3.

> He who learns from one occupied in learning drinks from a running stream. He who learns from one who has learned all he has to teach drinks 'the green mantle of the stagnant pool'.*

For the same reason the Robbins Committee rejected the too rigid division between teaching and research:

> There is no borderline between teaching and research; they are complementary and overlapping activities. A teacher who is advancing his general knowledge of his subject is both improving himself as a teacher and laying foundations for his research. The researcher often finds that his personal work provides him with fresh and apt illustration which helps him to set a subject in a new light when he turns to prepare a lecture.**

For the same reason, too, the various attempts which have been made, by the UGC and by the Robbins Committee itself as well as by other bodies, to break down in precise hours or percentages the amounts of time which university teachers spend on teaching as opposed to research have produced statistics which are meaningful only in a very restricted sense. For what they are worth the Robbins statistics show that university teachers spend on average during term 34% of their time on teaching, preparation and marking, 39% on research and private study, 21% on administration and other work within the university, and 6% on work outside the university (including consultancy, liaison work, joint committees, etc.). Professors spend less time on teaching and research and more on administration, readers and assistant lecturers the reverse.*** There is no reason to think that the figures would be much different for the New Universities, except that the staff probably do more teaching and administration at the expense of their research in the first few years. There are of course hours when university teachers are undoubtedly teaching, or preparing to teach, or marking the work generated by teaching; and there are equally hours when they are undoubtedly researching – the historian in the record office, the sociologist on an empirical survey, the physicist operating a linear accelerator, the metallurgist examining the crystalline structure of meteoric iron. But, apart from the "feedback" both ways between even the purest research and the most routine teaching, there is a vast area in between where it is next to impossible to say whether research or teaching is uppermost, whether the face of the cloth is, as it were, predominantly warp or predominantly weft: from the private study of learned journals, in which one simply does not know until long afterwards whether the knowledge gained will be of value to teaching, research, or neither, to the direct, face-to-face teaching of postgraduate students who may be contributing more to one's research than they are at that moment receiving. There are of course exceptions to the self-flattering image of the academic, alive at every moment of his waking life to the mutual fertilization of his teaching and research; there are those who have escaped into teaching (or still worse, into administration) from the burdens of creative work and thought, and there are those who have escaped into uncreative and deadening research from the burdens of teaching, or indeed from the burdens of human contact altogether. But extreme cases make poor averages, and the average university teacher does both to their mutual benefit, while the best does them to his own huge enjoyment of both.

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* A.J. Scott, *Inaugural Lecture*, quoted by UGC, *Report for the Period 1929–30 to 1934–35* (1936), p. 42.

** *Robbins Report*, p. 182.

*** *Ibid.*, p. 183.

To speak, therefore, of a *balance* between teaching and research in a university is like speaking of the balance between RNA and DNA in a living cell: without either one of them the organism no longer exists. Nevertheless, there is a sense in which this balance is vital: the actual ratio of effort and resources which are put into the creation and discovery of fresh knowledge to those which are put into passing it on, and the precise mechanisms by which the two are connected with as little "transmission loss" between them as possible, are administrative and organisational decisions of the greatest moment to every university institution. Much research, especially in arts subjects, is inevitably individual, and the only available mechanism through which it can influence teaching is the university teacher himself. In the pure and applied sciences, however, and increasingly in social studies, teamwork is essential, and provides an automatic and traditional opportunity for the apprenticeship of young researchers. The training of post-graduate students is therefore the point at which teaching and research are most obviously and conveniently married, and the ratio of post-graduate to all students is perhaps the most useful, though clearly inadequate, statistical measure of the balance between teaching and research in any particular university. Table 9 sets out the numbers of post-graduate students by sex and subject group in each of the English New Universities. Stirling and Ulster were not yet included in the UGC Returns, but the first already had a few post-graduate students, and admitted some 34 (including six women), 24 of them full-time, by November 1967, in a student body of 188, a ratio of full-time students of 12.8%. The average ratio of full-time post-graduate to all full-time students in the English ones was 15.0%, compared with a general average for all universities in 1964–65 of 18.4%.* Allowing for the fact that half of the New Universities had not yet had time to produce any first-degree graduates and generate their own post-graduate students, this was a considerable achievement, while Essex and Sussex had topped the national average in their third and sixth years respectively.

Since the national average included the great post-graduate schools of London (with 28.4%), Manchester College of Science and Technology (24.9%), Birmingham (24.4%), Oxford (22.4%), and Cambridge (19.2%), this meant that the New Universities, except for Keele which belonged to an older tradition of slow growth and mainly under-graduate teaching, were already beginning to pull ahead of many of the smaller civic universities.

In brief, the New Universities have broken the ancient tradition that new institutions should serve a long apprenticeship not only as small but as primarily under-graduate teaching institutions. This is in line with the logic of their educational aims and philosophy. Broad, interdisciplinary first-degree courses imply the postponement of much professional specialization to the post-graduate level, a postponement recommended in general by the Robbins Committee and encouraged in the New Universities by

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* UGC, *Returns... 1964–65*, p. 20.

Table 8. FULL-TIME AND PART-TIME ADVANCED STUDENTS, 1966–67, ARRANGED BY SEX AND SUBJECT GROUP

	E. Anglia		Essex		Keele		Kent		Lancaster		Sussex		Warwick		York	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
A. *FULL-TIME*																
Arts	16	11	26	6	10	4	15	5	4	4	108	27	12	5	25	14
Social Studies	9	2	44	5	16	4	17	8	33	1	93	27	15	2	31	16
Arts with Social Studies	—	—	4	4	—	—	—	—	—	—	—	—	—	—	—	—
Education	—	—	—	—	36	15	—	—	—	—	41	37	—	—	18	28
Physical Sciences ..	95	3	50	3	49	2	26	3	38	1	215	19	70	9	38	1
Biological Sciences .	22	5	—	—	2	1	—	—	9	—	16	5	—	—	7	4
Engineering and Applied Science ...	—	—	—	—	—	—	—	—	50	—	14	—	24	—	—	—
Total full-time	142	21	124	18	113	26	58	16	134	6	487	115	121	16	119	63
B. *PART-TIME*																
Arts	2	1	1	—	17	7	4	1	8	2	20	2	22	3	7	1
Social Studies	—	1	3	—	22	6	4	3	5	1	20	3	7	1	5	1
Education	—	—	—	—	31	7	—	—	4	—	5	—	—	—	—	—
Physical Sciences ..	—	—	4	—	13	—	2	—	9	—	17	3	7	2	3	—
Biological Sciences .	6	1	—	—	8	1	—	—	2	1	4	1	—	—	2	—
Engineering and Applied Science ...	—	—	—	—	—	—	—	—	1	1	2	1	5	1	—	—
Total Part-time	8	3	8	—	91	21	10	4	35	5	68	10	41	7	17	2
C. *FULL-TIME Total, M and W.*	163		142		139		74		140		602		137		182	
% of full-time advanced to all full-time students .	13.5		19.0		9.9		7.4		11.9		21.8		15.1		13.6	

Source: Statistics supplied by Mr. R.C. Griffiths, Deputy Secretary of the UGC. Engineering and Applied Science at Lancaster and Warwick include Operational Research and Business Studies.

the UGC.* Both also laid stress on the need for systematic teaching as well as research at the post-graduate level, and although the New Universities did not invent the taught course, with lectures, seminars and tutorials as well perhaps as a small project or short dissertation, for the Master's degree, they have all shown great initiative and enthusiasm in pioneering novel M.A., M.Sc. and similar one-year courses in a great variety of subjects. Sussex has 22 M.A. degree programmes in arts and social studies, ranging from Management Studies to African Studies, and eight M.Sc. courses, from Control and Electro-mechanical Dynamics to the History and Philosophy of the Sciences. York has a range of one-year B.Phil. courses in most of the Departments, and requires research degree students in Physics and Chemistry to attend graduate lecture courses. East Anglia's one-year courses range from the M.A. in the Evolution of Modern Societies since 1870 to the M.Sc. in Theoretical Mechanics, Essex's from the M.A.s in Applied Linguistics and in the Theory and Practice of Literary Translation to the M.Sc. in Statistics and Operational Research and in Computing Science, Kent's from the Diploma in Sociology for graduates of other disciplines to the M.Sc. in Space System Electronics and Communications, and Warwick's from the M.A. in Business Studies to the M.Sc. in Automatic Control. Lancaster had pioneered M.A. courses in Operational Research, Systems Engineering, Marketing, and modern structural Social History. Keele has a small number of one-year courses, ranging from the M.A. in Victorian Studies to the M.Sc. in the Fundamentals of Ceramic Technology. Stirling, as already mentioned, offers M.Sc.s in Mathematical Psychology and in Technological Economics, both mixed marriages of an unusual kind. Even Ulster is offering amongst its very first courses an M.Sc. in Sociology and an M.A. in Contemporary International History.

It is, of course, easy to offer such courses, but more difficult to find students for them with the necessary financial support. One of the greatest disappointments of the New Universities, after the encouragement they received from the UGC in their emphasis on post-graduate studies, has been the scarcity of student's grants. Apart from the few who can support themselves, post-graduate students in Britain depend chiefly on the State and the Local Education Authorities. State awards are granted through the various Research Councils (for Science, Social Science, Medicine, and so on) or, for Humanities, directly by the Department of Education and Science. They are fairly generous (mostly about £500 per annum plus fees), but they are limited in number and therefore competitive, and except in science, confined to those with first and good upper-second class degrees. Until recently a student who failed to obtain a State Studentship (for a one-year course) or Major State Studentship (for a two or three-year course) could hope to persuade his Local Education Authority to make him a grant, but now the DES, which in fact supplies the money for LEA awards, has instructed them to support only applicants for vocational courses, leaving the non-vocational, purely academic ones to the State system.* As a result it has become extremely difficult to obtain funds for supporting any but the very best candidates, especially in the Humanities. It is therefore all the more remarkable that the New Universities have managed to attract so large a share of the qualified and supported students.

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* *Robbins Report*, pp. 278–9; UGC, *op. cit.*, pp. 105–6.

* The DES is presently considering the transfer of the responsibility for all post-graduate awards to the central Government, through some award-granting agency incorporating an independent advisory body of academic staffs (similar to the Research Councils) – letter from the DES to the AUT, 29 January 1968.

A considerable proportion of the post-graduate students were engaged in research for the higher degrees of M.Litt., M.Phil., and Ph.D. or D.Phil. Most of these were in the pure and applied sciences, since, as elsewhere, research students are as necessary to the research work of the academic scientists as the laboratory equipment itself, and without such assistants it would be impossible to attract academic staff. Not only is this recognized by the Government in the more generous financial provision for the scientific Research Councils, but the sciences and technologies naturally find it easier to raise funds for research from other Government Departments and from industry and commerce, in which an allocation for the support of research assistants, normally working for higher degrees, is a usual element.

The whole question of the financing of research in universities periodically disturbs the academic world in Britain, as in other countries. In 1955 a report by Dr. V.E. Cosslett for the Association of University Teachers on *Scientific Research in Universities and Industry* (published by the International Association of University Professors and Lecturers with the assistance of UNESCO) found that about 50% of the research effort in British universities was financed by outside bodies, and that in the science and technological departments the proportion was much more than half. About 20% of the research effort of these departments was devoted directly to the problems of industry, and financed either by private firms or industrial research associations, while in addition about a fifth of their staff engaged in consultative work for such bodies. Funds from the Department of Scientific and Industrial Research (the precursor of the Science Research Council), the Research Foundations, and other Government Departments (excluding the UGC), at least equalled those from industry, making science and technology in the universities more dependent on outside finance than on their own resources, including the UGC block allocation. The moral and academic implications of this situation seemed to be that the universities were not in control of their own research, and that they were in danger of being diverted from their "true function" of pursuing knowledge for its own sake ("pure research") to pursuing profitable applications of it for the benefit of private industry and the Government ("applied research" or "development"). Although the danger of this is always a potentiality to be avoided, it is doubtful whether this distinction between "pure" and "applied" research is necessarily correct or useful, since some of the "purest" research such as Clerk-Maxwell's on electromagnetic field theory or Rutherford's splitting of the atomic nucleus has led to great industries (not to mention weapon systems), while some of the most "applied" has been of little use or relevance to mankind's needs and problems. More to the point are the meaning and implications of financial dependence. There is a world of difference between a research contract for an industrial firm or a Government Department in which payment is linked to specific programmes of work of interest and benefit only to the paymaster, and a research grant from a Research Council or Foundation for a project thought up by the researcher himself. There is an equal difference between consultancy work paid for to the individual by the piece and a research studentship or fellowship provided without strings. No question of conscience or integrity arises in accepting open endowments of chairs, fellowships, whole departments or laboratories; if a whole university were financed in this way rather than by the State there could be no moral or academic objection. The report's objection to more than 25% of a university's or a department's total funds coming from sponsored research can thus in logic apply only to research contracts, tied grants, consultancy work, appropriated staff salaries and studentships, and the like.

Recent reports by the AUT Committee on the Financing and Organisation of Research in the Sciences and Applied Sciences (March and November, 1967) endorsed the views expressed by Dr. Cosslett, and considered that the situation had not changed significantly since 1955. They suggested that, to reduce dependence on outside funds, the UGC should make available a substantial sum, of the order of £50,000 per annum for a medium-sized university, as a "risk fund" to initiate and develop independent research; that a special Universities Research Committee should be set up to disburse Science Research Council funds to the universities; that, as guiding principles in the negotiation of research contracts, it should be laid down that sponsored research should be closely related to the normal programme and recognized objectives of the institution, and that no arrangement should be accepted which imposed restrictions on the publication of research results, for purposes either of secrecy or of establishing patent rights. The response of most university scientists who commented on these suggestions was to welcome the "risk fund" (like any other means of increasing independent funds for research), to express trust in the academic representatives on the Science Research Council and its subject committees to look after the interests of the universities, to agree with the principle that sponsored research should be related to individual and departmental interests while doubting whether it was often accepted if it were not, but to defend the right of sponsors to prior claim to the results of research. In general the majority of correspondents were unperturbed about sponsored research and, while concerned about the detailed administration of research funds, were not concerned about their availability on a national scale. This is not to say that the majority were right; only that most academic researchers are not afraid to accept, and indeed actively to seek, sponsored research funds, and trust themselves to distinguish between contracts and tied grants which are and those which are not to their liking and advantage.

This discussion is pertinent to research in the New Universities because many individuals, schools and departments in them have had occasion to benefit substantially from outside sources of finance. Their need, starting *ab initio* with the basic minimum of resources and often in new and unfamiliar subjects, has been greater than in old-established universities, and their opportunity, starting in new areas with almost untapped local sources of generosity and offering the attractions of newness in ideas and drive, has also been substantial. It would be tedious to catalogue the enormous variety of outside support not only for research but also for the teaching of many subjects in the New Universities. A few examples from one of them will suffice to illustrate its range and complexity. In the "business technologies" at Lancaster the Chairs of Marketing, Systems Engineering and Financial Control are endowed by the Institute of Marketing, Imperial Chemical Industries Ltd., and the Wolfson Foundation respectively. The

Department of Operational Research, on the other hand, is largely self-financing, drawing about three-quarters of its income from research contracts, short courses for business managers, and the like, while the individual members of staff are allowed to engage in consultancy work, from which some of them gain a substantial additional income (thus compensating themselves for accepting lower academic than industrial salaries). The other Departments also accept research contracts, but they are not so dependent on them for their incomes. All of them depend to a large extent for their post-graduate students on the sponsorship and support of business firms, and although the University receives in fees only a small fraction of this money, it is in fact a substantial prop to their activities. Some members of the Operational Research staff would prefer to be funded by grants and endowments rather than by research contracts, but others believe that in a practical subject rooted in industry and government it is essential to have to seek out and deal with real problems, for attempting to solve which it is worth business men's and governments' while to pay.

In all research there is a balance to be struck between the intellectually satisfying and the useful, but these are not always incompatible. In medicine, law, architecture, engineering, and even theology – all of them traditional university subjects – we accept that the client or customer has some interest in the result of the expert advice or service, and that the professional man who consistently ignores the client and gives no satisfaction is, to say the least, inadequate. This is not to say that the doctor, the lawyer, or the clergyman must promise health, freedom from punishment, or eternal life, or that if they fail to provide them the client is free to refuse to pay the fee or salary. Academic researchers can refuse to accept research contracts if they are not to their liking and benefit. If they accept them, they must give the best service they are capable of, but if it does not produce the results demanded by the sponsor, he is not free to take back his money. He who pays the piper may call the tune, but the piper can certainly refuse to dance and sing as well. In other words, the New Universities have gladly accepted both endowments and commissions for research work from many quarters, but in no case that we have heard of have they accepted uncongenial work or over-restrictive conditions. The academic integrity of their staff is nowhere in jeopardy, and the benefit to researcher and sponsor has been mutual and equitably distributed. Meanwhile, the relations between the New Universities and the wider world outside have been immensely strengthened and enriched; but that is a story which belongs to Chapter X, below.

VIII

TEACHING METHODS AND ASSESSMENT

British universities have one of the most favourable staff-student ratios in the world. In 1950, according to the Robbins Committee, for each university teacher in Britain there were, in round terms, 8 full-time students, compared with 30 in France, 35 in West Germany, 14 in the Netherlands, 12 in Sweden, 12 in the USSR and 13 in the USA.[*] This ratio, in so far as it is not due to the large numbers of non-teaching staff (research fellows and assistants of various kinds), is usually explained by three related features of the British university system: the shortness of the degree course, by which graduates of fully comparable standard are produced in three years (in Scotland, four) instead of the four, five or more years common elsewhere; the consequent fact that much of the first-year work elsewhere (including Scotland) is delegated to the sixth forms of the schools in England and Wales, where the staff-student ratio is also comparable with first-year university courses in some foreign countries; and, in order to achieve rapid results and an output rate of graduates equal to that of most of Western Europe, a close relationship between university teachers and students sustained by a marked emphasis on teaching by discussion, especially in small groups. It is this last feature, close contact between teachers and taught, notably in the tutorial system in which one tutor confronts one to, at most, four students, which is the pride of British universities, though traditionally more associated with Oxford and Cambridge than with the civic universities. The staff set great store by it, since it enables them to get to know each student and his capabilities personally, to criticise and correct his written and practical work individually, and to bring out to the full his capacity to think for himself. The students appreciate it, and whenever they are asked always demand "fewer and better lectures, closer staff-student relations, and more teaching by tutorial and seminar".[**] Whether many students are capable of sustaining the preparation and written work required for more discussion group teaching than they actually get is a question to which we must return, but the demand for it is sufficient proof of its popularity.

The New Universities are firmly in the British tradition of high staff-student ratios and small group teaching. For the very good reason that their staffing policies were justified to the UGC by comparison with existing universities, their ratios are much the same, erring if anything on the favourable side, since in the early years a somewhat higher proportion of staff is needed to cover the whole range of courses for a small number of students.

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[*] *Robbins Report*, p. 41.

[**] UGC, *Report of the (Hale) Committee on University Teaching Methods* (London, UMSO, 1964), p. 45.

Table 9. FULL-TIME STAFF AND FULL-TIME STUDENTS, 1966–67

	Staff	Students	Ratio
E. Anglia	170	1,216	7.1
Essex	112	751	6.7
Keele	202	1,410	7.0
Kent	135	1,004	7.4
Lancaster	153	1,176	7.7
Sussex	374	2,763	7.4
Warwick	135	906	6.7
York	164	1,348	8.2
New Universities	1,445	10,574	7.4
All Universities, 1962–63	15,764	118,404	7.5
All Universities, 1964–65	17,117	138,711	8.1

Sources: Statistics of New Universities supplied by Mr. R.C. Griffiths, Deputy Secretary of UGC (Stirling and Ulster not then open); statistics of all universities from UGC returns.

These are unweighted ratios, counting under-graduate and post-graduate students as equal units, but the weighted ratios used by the UGC, counting a post-graduate in arts and social studies as equivalent to two under-graduates and in the sciences as three, would make little difference since, as we saw in the last chapter, the New Universities' percentage of post-graduates is approaching the national average.

The New Universities, therefore, have the means to continue the tradition of close contact and small group teaching. They also have the will. Coming as they did, except for Keele, at the time of the Robbins Committee and of the Hale Committee on University Teaching Methods, both of which strongly favoured an extension of the system, they all without exception declared their intention to lay great stress on under-graduate teaching in small groups. In this they were not unusual. Many civic universities at that time, in the prevailing climate of opinion, were overhauling their teaching systems and, while it would be unfair and misleading to repeat the traditional libel on them that they formerly taught exclusively by lectures, they began to put increased emphasis on seminars and tutorials. Keele had already shown the way, particularly in its jointly taught discussion groups in the Foundation Year, and in the Sessional courses which were originally intended, before the numbers grew so large, to be taught wholly in tutorials. Sussex makes a feature of its tutorials, with one tutor to two students in arts and social studies and one to four or five in the science schools, and also of its jointly taught seminars in arts and science. York declares that:

> "a central role is given to the tutorial system, which provides an opportunity for the creation of those personal links between teachers and students which help to make a university a place of education rather than one simply of instruction."

East Anglia, as a critic has said, "claims to have re-invented the seminar": as well as in lectures and tutorials, each subject or subdivision of one is taught in a seminar, in which

> a group of between eight and fifteen students meets for three hours a week for a whole term. Considerable importance is attached to students' contributions, both written and verbal, and in this way it is hoped that teaching becomes much less of a 'one-way' process than usual.

In Essex, the basic teaching in most subjects is given in discussion classes of up to ten students, although lectures also play a part, especially in the first year, while in the physical sciences tutorial teaching takes place during the laboratory classes. In Kent all the Faculties say that "teaching is given in lectures, seminars and supervisions," the latter being tutorials of, in the Humanities for example, not more than two students. Warwick also makes use "where appropriate of the whole range of teaching methods — lectures, seminars, tutorials — as well as practical work." Lancaster leaves the choice of the most appropriate form of discussion group — seminar, tutorial, practical or examples class — to each Department. History, for example, is taught in tutorials of four students (five in the first year), while Politics and Philosophy in the same Board of Studies are taught in seminars of up to a dozen. Stirling does much the same, putting considerable emphasis on classwork.

In spite of this emphasis on small group teaching, none of the New Universities neglects the use of lectures. The value of the lecture as an integrated, continuous exposition of a subject, free from the interruptions and digressions of a discussion group, and bringing together the fruits of wide and up-to-the-minute reading by the lecturer which would be beyond the scope of the student, was emphasized by both the Robbins and the Hale Committees, although the latter disagreed with the former's objection to lectures to very small audiences. There are in fact still better arguments for the good lecture, though there can be no argument in favour of a bad one. A lecturer, in the words of one American educationist, is "more than a textbook wired for sound", just as a student is "more than a brain on stilts".* They are both human beings, not de-humanized learning and teaching machines, and the process of education is not a mechanical transfer of knowledge from the one to the other. We know little enough about the way in which human beings learn, but we do know that they need to feel that what they are learning is valuable and worth acquiring, that the person they are learning from is sufficiently admirable to be worth emulating, at least in his mastery of the subject, and that psychological identification by the student with the teacher or the teacher's role is an important part of the process.** The teacher is always there in any sort of class to be emulated and identified with, and his role as an analyst of arguments and critic of the student's performance is fulfilled in the seminar and tutorial, but only in the lecture can he fully display his mastery of the subject and communicate his enthusiasm for it. In spite of the strong preference expressed by students for discussion teaching rather than lectures, it is doubtful whether they would not feel still more deprived and underdeveloped if lectures were abolished altogether. In none of the New Universities are lectures compulsory, except, in theory, for the Foundation Year lectures at Keele, so that those students who dislike them may " abolish " them for themselves. Yet it is very striking that the vast majority of students continue to attend them for a majority of the time. Perhaps this is due in part to the fear of " missing something which may be useful in the exam. ", but even this is an indication that students when faced with the last and crudest test of worth still think that lectures have some value.

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* Farnworth, quoted in N. Malleson, 'The Influence of Emotional Factors in University Education', *Sociological Review Monograph No. 7,* (1963), pp. 156, 158.

** Cf. Malleson, *op. cit.*, pp. 156-8.

On the other side, discussion group teaching is not so obviously and automatically valuable in itself as is often supposed, especially by students. Quite apart from the question whether the tutor or seminar leader is skilled in getting the students to do the thinking and talking and in avoiding the common trap of turning the discussion into an impromptu lecture, the chief defect of much discussion teaching is insufficient preparation on the part of the students. Both the Robbins and the Hale Committees believed the chief aim and virtue of such teaching to lie in the work which the students did themselves by way of guided reading and the writing of essays, exercises and reports, in the marking and individual criticism of that work, and in the discussion arising out of it. Thus tutorials and seminars which do not build on a prior foundation of knowledge and thought are less, not more, valuable than lectures, and it is possible for students to have too many of them, that is, more than they have time adequately to prepare for.* As to the optimum size of discussion groups, this varies with the nature of the subject and the kind of preparation expected of the student. A subject such as history or literature which requires both a great deal of reading and specific opportunities for the student to display his capacity for critical handling of complex material is best taught in small tutorials; one like politics or philosophy which consists in the ability to mount and criticise familiar arguments and illustrations may be better taught in somewhat larger classes; while mathematics or the natural sciences may more appropriately by taught in large examples classes or laboratory periods by a peripatetic tutor coaching individuals as their private work proceeds. Meanwhile, even in the same subject, a smaller group may be more appropriate to an essay class in which every student needs to have his work criticized, a larger one to a seminar-type class in which all the members have a general background of relevant knowledge against which to discuss and criticize a paper on a special topic by one of them. As to the effects of teaching the same subject in different sizes of group, the only objective study of which the Hale Committee was aware was that of Dr. T.L. Cottrell, now Principal and Vice-Chancellor of Stirling, when he was Professor of Chemistry in the University of Edinburgh:

> His conclusion was that in the contexts of his experiments variations in size of tutorial group from three students to 24 students had no

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* Cf. *Hale Report*, p. 76.

> significant effect on their examination performance, groups of 12 actually doing slightly (but not significantly) better than groups of three. Professor Cottrell remarks that 'if the main virtues of the tutorial system are that it encourages regular habits of work, and regular writing about the objects of study, with the actual tutorial discussion playing a relatively minor part, then it is not surprising that the size of the tutorial group is unimportant.'[*]

What is true for chemistry however, is not necessarily true for other subjects, especially the more "Socratic" subjects on the other side of the "Snow line", in which discussion, argument and criticism are the heart of the matter, and not some extrinsic approach to it. The answer is that there is no answer to the ideal type, method and size of discussion teaching group; it differs with the subject, the purpose and, not least, with the type of student. It may be that very small group teaching, preferably in the one-to-one tutorial, is most appropriate to the brightest and the dullest students, the first to turn his spark into the fire of genius, the second to make his light shine before men at all.

Much of the discussion of teaching methods in universities is bedevilled by an underlying assumption that a choice has to be made between lectures, tutorials and seminars. It is a relief to find the Robbins Committee declaring roundly that:

> We are in favour of diversity and believe that in a well-organised course of instruction different types of teaching should be combined.

On the other hand they considered that too much instruction was received through lectures. They found that the average British under-graduate received 8.1 hours of lectures per week, 1.6 hours of discussion teaching (0.6 hours in a group of ten or more students), 4.8 hours of practical class teaching, and 0.5 hours of other teaching, making a total of 14.8 hours per week. The hours differed markedly between universities and between faculties. Total hours at Oxford and Cambridge were only 11.0 (including 2.0 hours of discussion teaching) and between 15.5 and 15.8 at most others (including 1.5 – 2.0 hours of discussion) except in the small civic universities, where they were 12.9, and Scotland, where they were 17.0. Between faculties total hours varied from 9.9 in social studies and 10.1 in humanities to 17.4 in pure science, 19.9 in applied science and 21.6 in medical subjects, the difference between arts and science being accounted for mainly by practical classes, which take the place in science of library work and essay writting in the arts.[**] Whether these figures bear out the Robbins Committee's contention of too much lecturing and too little discussion teaching is a matter of opinion: 2.3 hours a week of discussion in humanities and 1.7 in social studies imply a heavy programme of preparation if done properly, and I very much doubt whether the members of the Robbins Committee did more as under-graduates.

There are no comparable figures available for the New Universities, but our impression is that average hours of teaching received are, if anything, higher than the national average in most subjects, except perhaps for rather less emphasis in many of them on the very long hours of laboratory classes in pure and applied science common elsewhere. Lecturing hours are about average, but discussion teaching is being pushed to the limit of the student's capacity, though there are considerable variations. In Keele in the Foundation Year, for example, a conscientious student would attend each week ten lectures and a discussion group on the "Main Thread", and a further two to five hours of mainly discussion class work in Terminals and Sessionals, depending on whether they were in arts or science (the latter including practicals). In Lancaster, a first-year student on the arts side would by contrast have only about six to eight hours of lectures plus about three hours of discussion teaching (strictly, six hours a fortnight in as many different classes, implying an extremely heavy load of individual preparation);[*] on the science side he would in addition have two or three laboratory sessions of four hours each. Most of the other New Universities demand student loads somewhere between these two.

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[*] *Hale Report*, p. 63.

[*] *Robbins Report*, pp. 186–7.

It is, of course, a commonplace that joint-subject courses, while they do not necessarily require more hours of formal teaching, make heavier demands on students for reading, preparation and written work. This is certainly borne out by the experience of students in the New Universities, especially those with the greatest emphasis on interdisciplinary courses. Keele requires fifteen "Foundation Year essays" from each student on an extraordinary variety of topics, plus other written work for one Sessional and three Terminal courses in the first year. In Lancaster a first-year student on the arts side would probably have about eighteen to twenty-four essays in all, plus preparatory reading on at least as many more topics. There is no doubt that the student's load, either of hours of teaching or of individual study, is no lighter in the New Universities than elsewhere, and in so far as it spans more subjects it may actually be heavier.

In none of this, however, is teaching in the New Universities remarkably innovatory. Where it differs from that of the older universities, at least in some of the new ones, is in the interdisciplinary nature of some of the teaching. There are at least four varieties of this, all of which can be found in the New Universities. The first and most obvious is the interdisciplinary lecture course, in which lecturers from different disciplines follow on each other. The classic example is the Keele Foundation Year with its 230 lectures by about 50 different lecturers, but many others can be found, such as the Introductory course at Warwick, the "Approaches and Methods" course at Stirling, many of the contextual courses in the various Schools at Sussex, the common first-year courses in the School of Comparative Studies at Essex covering the literary, artistic, governmental and sociological aspects of modern societies, the "topic" courses ("The Evolution of the City", "Science and Religion", etc.) in the Faculty of Humanities at Kent, the "open courses" at York, and a number of postgraduate courses, such as the M.A.s in Victorian Studies at Keele and in Renaissance Studies at Warwick. At Lancaster, by contrast, and in many Schools and Boards of Studies elsewhere, interdisciplinary studies mean exposing the student to separate lecture courses by different lecturers and letting them make their own connections if they can.

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[*] Mr. W.T. Koc, Research Fellow in University Teaching Methods, found in 1965 that the average preparation time amongst first-year students for a typical essay varied from 6 hours in philosophy to about 23 hours in history.

The second variety of interdisciplinary teaching is to allow tutors from different disciplines from the lecturer to discuss topics arising from the lectures with groups of students. This inevitably happens with some of the larger first-year, introductory and contextual courses mentioned above, since the number of tutors required often exceeds the staff in any one discipline. A more interesting innovation, however, is the third, in which more than one tutor from different disciplines jointly discuss a topic with a group of students. Again, the classic example is from the Keele Foundation Year, in which every student attends a Discussion Group taught jointly by three tutors from different Boards of Studies. The Sussex Arts and Social Studies Schools make a feature of joint seminars in which, say, tutors in English literature and economic history will discuss the novel in the context of the actual social conditions in early Victorian England. Similar joint seminars take place in East Anglia in English and philosophy, English and history, and in social studies courses such as "The Welfare State". On the whole, however, this method of teaching is time-consuming and makes very large demands on the initiative and readiness to co-operate of the staff, which may explain why it is not more common.

The fourth variety is the common attendance of students from different disciplines at the same discussion groups, in which it is hoped that their different approaches will strike sparks of mutual illumination. In a broad, interdisciplinary programme joint attendance is almost inevitable in any case, unless special efforts are made to avoid it. In some of the New Universities, especially those with courses designed to bridge the gap between arts and science, special efforts are made to bring the two sides into contact. This is the case, for example, at Sussex in the Arts-Science Scheme and in the joint seminars between different Schools, and at York in the seminars of the "open courses". At Lancaster the "breadth" or "distant" subjects to study brings together students from a variety of major subjects to study a mutually unfamiliar discipline, though it tends to result in those from arts and social studies taking a science course together, and *vice-versa.*

The general conclusion would seem to be that there is less real interdisciplinary, that is, joint teaching in the New Universities than one might have expected from their educational aims and philosophies. Almost everywhere many of the staff and most of the students claimed that they would like more of it, but in practice the staff found it hard and sometimes unrewarding work and the students were often disappointed with the specific interdisciplinary lecture courses which they attended, though they were more enthusiastic about some of the jointly taught seminars. Perhaps too much is expected from the "contrived collisions" between staff and students from different disciplines which, like contrived meetings between different nationalities or races, do not necessarily lead to mutual understanding, unless there is goodwill and co-operation on both sides. The jointly taught seminars were successful less because they were discussion groups than because the sheer effort of teaching together in the same room demanded liaison, co-operation and mutual tolerance from the tutors. If the same effort were put into all joint teaching the same result might follow.

The present age is one of rethinking and overhaul of teaching methods in all British universities, not least in what it is now fashionable to call "educational technology". In addition to the Hale Committee on general teaching methods there has been another UGC Committee on Audio-Visual Aids in Higher Scientific Education, under the chairmanship of Sir Brynmor Jones, Vice-Chancellor of Hull University, which recommended considerably increased finance for teaching aids, from overhead projectors and teaching machines to films and closed-circuit television, and a National Centre to encourage their use by the exploitation and publicizing of new aids, the training of staff, and the provision of cataloguing and library, information and advisory services.* As a result the Secretary of State for Education and Science announced in March 1967 the setting up of a National Council for Educational Technology, also under the chairmanship of Sir Brynmor Jones, to consider the necessity for the establishment of the National Centre and the range of its functions, and to advise institutions of higher education, Government Departments, and bodies concerned with training in industry and the armed forces, on the most appropriate and economical ways of using aids. To many, including the AUT, this seems an attempt to shelve or reduce the functions and cost of a National Centre, which in the present economic climate it might well be.

Most of the New Universities have shown interest in some aspect or other of mechanized teaching aids, usually arising from the accidental enthusiasm of particular individuals on the staff. At Kent the Professor of Economic History is an enthusiast for teaching aids generally, and chairs a committee to encourage their use, while the Dean of the Faculty of Humanities is an enthusiast for films, and puts on, on Saturday mornings, a programme of classic films related to the Part I "topics" and Part II courses, from "The Vision of William Blake" to "The Blue Angel", which are immensely popular with the students. In Lancaster the Professor of English is an enthusiast for most teaching aids and the Professor of Physics for television, and they have pioneered a teaching aids building which will contain language laboratories, studios, and the like. East Anglia took part in 1965, with Cambridge and other universities, in a pioneering experiment with inter-university television teaching, though the initiative for this seems to have come from Mr. Peter Laslett, Fellow of Trinity College, Cambridge. Both Essex and York are pioneering the high-speed teaching of languages through the medium of the language laboratory, a trend which is for obvious reasons being pursued in many of the older universities.

Most innovatory of all is the Centre for Academic Services at Sussex, where the Director, Mr. Norman Mackenzie, is more than an enthusiast for all forms of teaching aids, and is deeply concerned with the whole range of problems of educational communication. He thinks of the Centre as providing not equipment and advice for academics who wish to teach in a particular way, but a team of experts in various media who can be called in to solve the problem of how to teach a particularly difficult course. A notable example is the preliminary course in "Structure and Properties of Matter" taken in the first two terms by all candidates for the B.Sc. degree. The problem lies in the difficulty of communicating a complex, mathematical and microscopic view of the structure of the universe, from the atomic nucleus to the macro-molecules of living organisms, to very large numbers of students from very diverse backgrounds. Every kind of aid is applied to this, from closed-loop film to television (though the latter is principally used to link lecture theatres since the numbers are too large for any one of them), but the principal and most successful aid is a simple booklet of example-problems in which each student can follow the course, working out the exercises in his own time. This, it is envisaged, may develop into something approaching a book of programmed instruction akin to the programme of a teaching machine. If it does, the contribution of the Centre will not lie in the sophisticated mechanical aids provided, but in the new clarity of thought and exposition evoked from the academics giving the course in reducing what they have to say to a self-explanatory programme. At the other extreme the Centre has solved the problem of the absence of a professor on leave for a year by video-taping all his lectures for television. The Centre is to link up in a joint building with the School of Education and amongst its other activities study the operation and objectives of the Certificate of Education course for intending teachers.

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* UGC, *Audio-Visual Aids in Higher Scientific Education: Report of the (Brynmor Jones) Committee* (London, HMSO, 1965).

Most audio-visual aids are expensive, and the UGC, while welcoming the current interest in them everywhere, has decided in its "general guidance" for the 1967-72 quinquennium to limit the number of "high activity" centres for which special funds will be provided to ten. It is significant of the enthusiasm and readiness to experiment of the New Universities that no fewer than three of them have been selected as such centres: York and Essex for the "use of modern media in the teaching of language and linguistics", and Sussex for "multimedia".

The core of the problem of improving university teaching in Britain is that the vast majority of academic staff receive no training in how to teach, so that not only do most teachers have to learn for themselves the art of instruction but the opportunity is lost for formally communicating to them whatever improvements are discovered by such innovators as the Sussex Centre for Academic Services. The Hale Committee found that only 10% of their sample of university teachers had completed courses of training as (school) teachers and that only 17% had ever had any instruction or guidance on the teaching of university students, which was necessarily almost all of an informal kind, since only Nottingham University offered centrally organised courses of instruction, and those only on a voluntary basis and in the previous three years. A majority, 58%, of the sample, thought that "newly-appointed university teachers should receive some form of organised instruction or guidance on how to teach."[*] On the other hand, the AUT Panel on Teaching Techniques has found "a deep-rooted suspicion of any attempt to model in-service training in higher education on the lines of that carried out (for intending school teachers) in departments of education," and that many academics believe that time spent on such courses could be better spent on research. At all events, the New Universities are doing less than the old to rectify the situation. Of the 40 institutions which replied to an AUT questionnaire in January 1968, about half reported some kind of in-service training for new recruits to the profession, either of two to three days' duration or one lecture/seminar a week for one term. Of the New Universities only Keele reported an organised course of instruction in basic teaching techniques and educational technology, four evenings on each, repeated every two to three years, although Sussex was informally discussing whether to mount a formal course, and East Anglia's Professor of Chemical Education was providing courses in his subject. *

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[*] *Hale Report*, pp. 103–4.

The New Universities have a better record, however, in the organised study of university education. Keele, Essex and Lancaster were three out of the four universities which the Hale Committee reported as having full-time appointments in higher educational research.** Keele, with the help of the Nuffield Foundation, had appointed as research fellow to study the problems of the Foundation Year, Mr. A.H. Iliffe, whose valuable report has been used above. Lancaster established the first Department of Higher Education in the country, with two research fellows financed by the Leverhulme Trust for the comparative study of institutions of higher learning, investigations of learning situations and the effectiveness of teaching, problems of assessment and examination, and the social, psychological and intellectual problems of students. Two major projects have occupied their time, a study by Mr. W.T. Koc of learning and teaching in small groups which has included a visit to America and investigations in a number of British universities, including Keele and East Anglia, and investigations by Mr. John Heywood into the functions and methods of university examinations and related questions of university testing and selection methods. Essex set up a similar Unit for Research into Higher Education under the direction of Dr. Ernest Rudd, financed by a grant from the Calouste Gulbenkian Foundation. The Unit's investigations have included studies of post-graduate education and students, of the different patterns of student life and work in various institutions, of student residence in the Essex towers (by Miss Marie Clossick) and a survey of lodgings in the Colchester area, and of university selection, assessment and examination (by Mr. Roy Cox). It is significant that none of the three New Universities' initiatives was originally financed by the UGC, although the latter has since begun to finance a number of major projects in higher educational research, notably in Birmingham, Manchester and the London School of Economics and Political Science. It is also significant that all three developments, as Foundation grants have run out, have been wound up as separate research units, although the staff have been able to continue their activities as permanent members of the faculty supported by general university funds. Mr. Iliffe, as Senior Tutor at Keele, still maintains a general oversight of student selection, teaching and examination methods. The Lancaster Department of Higher Education has been amalgamated with the new Department of Educational Research, and continues its full range of activities. The members of the Essex Unit have been absorbed into the Department of Sociology as full-time teachers and researchers.

Other New Universities have shown interest in certain aspects of higher educational research. Sussex has appointed a research fellow, Mr. Brian Smith, in Socio-Educational Research, whose duties include the systematic collection of all relevant information on every student and the recording of his academic career. East Anglia has appointed the first professor concerned with education in a particular discipline, H.F. Helliwell, Professor of Chemical Education, who came from Keele. Graeme Moodie, Professor of Politics at York, is studying the government of universities, as mentioned above. On a wider scale, Professor Moodie, Dr. Rudd of Essex and Sir John Fulton, then Vice-Chancellor of Sussex, took a leading part in 1964 in the setting up of the Society for Research into Higher Education, which has done much to stimulate self-examination in all British universities. Meanwhile, the New Universities are particularly concerned with self-examination of the effects and the success or failure of their various innovations, and have made some attempt at evaluating these for the purposes of planning future changes and developments, but these belong to Chapter XI on Planning and Finance.

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* Lancaster is launching a course of in-service training in September 1969.

** *Ibid.*, p. 107.

One of the most important and, until very recently, most neglected aspects of university education is the question of assessment of student ability and performance, and it is in this that several of the New Universities have made major innovations. In nothing have British universities been more complacent and conservative than in their attachment to the formal written examination at the end of the first degree course, in which, by his answers to some six to ten three-hour question papers, a student is evaluated, classified and labelled for life as a first, second, third or lesser-class intellect. Almost the only variations on this method of assessment have been the practice in some universities of giving a *viva voce* examination (i.e. an oral interrogation) to " borderline " candidates, especially those bordering on the first class, and in others of determining such cases by reference to their records of written course-work; the substitution in a number of specialized honours courses, notably on the arts side, of a substantial thesis or written project for one of the examination papers; and on the science side, practical examinations performed in the laboratory. The Hale Committee found that four out of five respondants in their sample survey of university teachers thought that the existing system of written examinations was the best practicable method of providing an incentive to students to work hard, and three out of four that they were the best method of assessing under-graduate quality.*

Nevertheless, in recent years a great deal of disquiet has been expressed, by educationists and by students' organisations such as the National Union of Students, about the examination system, throwing doubts on its validity, objectivity, educational value and its psychological effects upon candidates. A long series of investigations from the classic work of Hartog and Rhodes in 1935 to that of Professor Drever in 1965 have shown that different examiners' marks for the same examination scripts (admittedly in artificial experiments in which the examiners have not taught and do not know the students, and have not even met to agree on what they are looking for) can vary by as much as 49 %, or all the way from alpha to gamma (from first class to outright failure).** The Robbins Committee found large variations in failure rates between universities, and between faculties and departments in the same university, and suspected that "in some faculties there is an approximate percentage of students whom it has become customary to fail," whatever the general standard of the intake. They also pointed to the remarkable fact that although average entrance standards (measured by A-level grades) were higher in arts than in science and far higher than in technology, only 5 % of arts graduates in 1959 gained first-class degrees, compared with 10 % in science and 12 % in technology. They also varied within arts in 1962 from 4 % in history to 12 % in classics, and in science from 9 % in geology to 14 % in mathematics. Between 1953 and 1959 there was also a decline in the percentage of firsts in arts, science and technology in spite of an increased competition for places and a rise in entrance standards. Not surprisingly, the Robbins Report recommended that the universities "should consult together to ensure that they have the benefit of each other's experience and of any experiments and studies that are being made."* Others have blamed the examination system for placing too much psychological stress on students, for putting a premium on unintelligent memorization and the rote-learning and regurgitation of lecture notes, and for relying exclusively on the student's health and mental fitness during a minute period of his university career.**

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* *Hale Report*, p. 87.

** Sir Philip Hartog and E.C. Rhodes, *An Examination of Examinations* (1935); J. Drever, 'On Examinations', A paper given to the National Association of Schoolmasters, April 1965; cf. Roy Cox, 'Examinations and Higher Education: A Survey of the Literature', *Universities Quarterly*, *XXI*, 1967.

The Hale Committee, while finding that written examinations required "certain qualities which are useful in later life," noted their shortcomings and welcomed experiments with different kinds of examination, such as the "open-book" type, and of assessment, especially the taking into account of the quality of the student's work during the course. In particular, it singled out the intention of East Anglia to award one third to one half of the marks in the final degree for the student's performance in course work. This was the one and only example the Report could name of "continuous assessment", the evaluation of the student's ability and achievement in large part by his written work and oral contributions to seminars and tutorials throughout his university career. It was somewhat sceptical about it:

> Such arrangements... have certain disadvantages. To the extent that the student is assessed on the basis of work done during the course, the independent assessment of the external examiner may be lost; and a teacher may be less effective if his relationship to the student throughout his course is also that of examiner. It is arguable that a student's chances should not be unduly prejudiced by inferior work done at an earlier stage, if its inferiority is the result of poor pre-university preparation. A student who knows that earlier inferior work will be taken into account may be discouraged and fail to make the progress which he might otherwise have made.

It nevertheless welcomed experimental innovations, for two reasons:

> The first is that in an age in which there is so much insistence on equality of opportunity, the influence of examinations and other tests on the careers of the most gifted members of the rising generation will certainly not diminish. With so much depending on examinations, it is clearly of great importance that they should measure as well as possible, not only the knowledge which the candidate has acquired of

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* *Robbins Report*, pp. 189, 190–1; *Appendix Two* (*A*), p. 315 and Annex K.

** Cf. *Hale Report*, p. 91.

> his subject or subjects, but also the qualities and habits of mind for which a degree, and its class, may be expected to vouch. The second reason is that the form and content of the examinations for which he prepares cannot fail to have a considerable effect on the education of the student and on the ideas and habits of mind which he acquires. It is important that this effect should be beneficial and should encourage good teaching. These are matters which we think would repay continued study and experiment.*

The New Universities have undoubtedly led the way in experiment with assessment. Even Keele, which in this belongs to the older tradition of reliance on the written examination, has been forced by the innovatory nature of its degree course and particularly by the large numbers having to be examined on the main course in the Foundation Year, to pay much more attention to the methods and objectives of assessment and to experiment with such devices as "objective tests" (questions with multiple-choice answers to be ticked). Sussex has remained traditional in this respect, merely using course records to pull up a borderline examination candidate (though it has experimented with the examinations themselves), and so to a similar extent has Kent.

East Anglia, of course, is the pioneer of continuous assessment. Under the Course Credit System:

> The University departs radically from established practice in its method of assessing student performance. At each of the two stages of a student's under-graduate career, in the Preliminary and Final Assessments, credit is given for work done in seminars. At the end of a seminar, which lasts for one term, the instructor recommends a grade or mark for each student which has to be approved by a course grading committee composed of members of faculty of the School. This grade is communicated to the student. In Arts Schools it is based mainly on the written work which is required of each student and on his class papers and oral reports; the contribution which he has made to class discussion is also taken into account. In the Science Schools, practical and laboratory, as well as written, work together with work in problem classes is also taken into consideration in arriving at the course grade. By the end of the Honours programme a student has accumulated a number of course grades. This allows the number of Final Examination papers to be reduced and, we believe, provides a more reliable means of assessment, and one which puts less strain on the candidates than the conventional system where everything depends on a massive final written examination. By this system of giving grades for courses a student is continuously aware both of the standard which he is attaining and of what is expected of him. Moreover, experimentation in the choice of seminars is not discouraged since not all the course grades obtained have to be submitted for the Final Assessment; a proportion may be discarded... The marks awarded for the course work amount to between a third and a half of the total marks obtainable in the Final Assessment as a whole. They thus play a considerable part in determining the class of a student's degree.

In the School of Social Studies, for example, the Honours Programme consists of twelve one-term seminars. For each student the board of examiners selects four of his twelve seminar marks (the second, fifth, eight and eleventh in order of merit), and places these alongside the marks for his six examination papers. The continuous assessment element therefore accounts for 40% of the final degree classification. Opinions differ widely about the resultant effects on student attitudes to work. "My impression is that students are not overworked as a result," said the Dean of the School of Biological Sciences, but the Professor of Philosophy and Dean of Students thought that "Continuous assessment makes people work too hard." The students themselves were very conscious that every essay counted and were afraid of failing a seminar. They claimed that you could feel the atmosphere of the University change as essays became due, and student activities would be postponed to avoid essay writing times. No doubt this effect could be avoided if essays fell due at different times for different groups of students, as they do in most universities. The University authorities claim that the extra strain of continuous assessment is more than compensated by the lessened pressure of the final examination.

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* *Hale Report*, pp. 92–3.

The other New Universities use continuous assessment, but mostly in a much less formal way. At York, Departments decide for themselves how students will be assessed. Students in some Departments are allowed to present their best essays as part of the final assessment. In English the 1966 assessment consisted of six conventional three-hour papers, two two-hour translation papers, one paper with advance notice of the questions, three long essays prepared over at least one vacation, and a "paper" of their three best tutorial essays. One Department, Education, has abandoned formal examinations altogether, and assesses entirely on written work, essays "written under examination conditions" in discussion classes, and tutorial judgements, which count for more in the third than in earlier years. In Essex, course work in the first year counts towards the Progress Examination and in some Departments towards the Final Examination. In Government second and third-year class marks account for 25%, in Sociology for 40% of the final classification, the marks being chiefly essay marks and being fixed by the tutor concerned acting on his own. A Professor of Sociology who was also Dean-elect of Students was strongly in favour of the system: "On the whole there is a remarkably high correlation between class marks and the examination"; but since the same person marked both, this was hardly surprising. He was also in favour of experimenting with examination methods, and had introduced "advance notice" questions into some of the papers. Prior knowledge of the questions appeared to make little difference to the results. Warwick has no common policy; some Schools operate continuous assessment, while others do not. In the Science Schools there is a system of cumulative assessment, by which course work in the first year counts 10%, in the second year 25%, and in the third year 65% towards the variable continuous assessment element in the final classification. Another innovation was their classification of the Part I result (into I, II.1, II.2, etc.) in the same way as Part II, on the grounds that the usual Pass/Fail categorization does not give students sufficient indication of how well they are doing and how much harder, or otherwise, they need to work for Part II.

Apart from East Anglia, Stirling and Lancaster are the most formally committed to continuous assessment. In Stirling at the end of every Part I course the student is given a grade, based on continuous assessment (periodic tests, class work, and so on) and the examination. In at least one subject, philosophy, the student has to sit the examination only if he does not accept the Subject Committee's assessment and wishes to improve his grade, but he will not be penalized for falling below the offered grade. Stirling had not yet reached the first Part I examination, which takes place at the end of the third semester early in 1969, and whether the same methods will apply to Part II is not yet clear, but the University declares its intention of experimenting with other methods than the written examination, including objective tests, oral examinations, practicals and prescribed tasks. Lancaster uses continuous assessment in both Part I and Part II. The assessment is based on written work and contributions to discussion classes, and is fixed by the individual tutor. The resultant mark counts as a definite percentage of the consolidated mark for each course, though the percentage varies from one Department to another, from 20% at the lowest to 50% at the highest. Differences of practice have already arisen, some Departments strictly amalgamating the marks, others allowing the continuous assessment only to raise and not to lower the examination mark, on the ground that the student must have the chance to prove his assessor wrong. Unlike East Anglia, essays are handed in in rotation as they fall to be discussed, and there are no special times of general pressure of work. Perhaps this is why there are no apparent side-effects from the practice, students seeming to treat essays with much the same *sangfroid* (or *ennui*) as in more traditional universities. One complaint, however, from Departments with low proportions of continuous assessment is that students give priority to the written work for Departments with high ones. On the other hand, experience of the first Final Examination suggests that the partial reliance on continuous assessment does not reduce examination nerves, although the high incidence may have been due to the absence of any earlier generation of graduates to show that examinations can be survived. From the examiners' point of view it was noticeable that even a small element of continuous assessment tended to pull candidates towards the middle of the range, pulling down the good and raising the poor examinees. This stems from the fact that course work marks are given for other reasons than pure assessment — to encourage, to warn, to avoid overpraising and relaxing the very able and discouraging and producing despair in the poorly equipped but hardworking student. Thus first-class and fail marks are rare amongst continuous assessments, and there is a danger of failure to discriminate in the final classification between the very good, the very bad, and the great mass of average students. Adjustments can, however, be made by allowing less weight to the essay marks disclosed to the student and more to the tutor's judgement of the candidate's real ability and potential, which was found in a large number of cases to be surprisingly accurate.

A final point, applicable to all the New Universities using continuous assessment, is that the Hale Committee's fear that the external examiners would not feel able adequately to judge the candidates' merit was not borne out in practice. The external examiners for Lancaster were asked to comment on the procedure, and uniformly declared themselves satisfied with the system, with the standards operated by the internal examiners, and with the performance of the students, which they found fully comparable with those in traditional universities. Their only complaint was that the variations in the practice of consolidating the marks, to raise and lower or only to raise the examination mark, made for difficulties in an interdisciplinary degree where the same candidates were being handled differently by different Departments. All in all, continuous assessment has proved to be a useful and successful innovation, and one which could with profit be adopted by other universities.

Assessment, whether by course work or examination or both, is a very serious matter for the student, since at the Preliminary or Part I stage it determines whether he is to continue in the university and if so in what subject or subjects, and at the Part II or Finals stage it decides the degree classification which, more especially in Britain than in many other countries where the first degree counts for less, will affect the whole of his subsequent career. It is therefore a matter of the utmost importance that the assessment shall not only be fair but be seen to be fair, that the student will have every chance to be judged on his real merit and effort and not on some fortuitous performance when he is "off form", and that his final classification shall represent the considered and responsible judgement of his teachers rather than the pure chance of a lucky or unlucky set of examination questions. From the point of view of the Government and society, which pay for and need the services of expensively educated graduates, it is also important to reduce failure rates to the lowest possible minimum. The cost of educating a British graduate is at least £3,000, composed of about £650 a year in university costs and about £350 a year for the student's maintenance. Although it may be argued that no education is wasted, failed students find that they have more difficulty in getting jobs than if they had never been to university at all, and they certainly cannot be used as trained personnel or command professional salaries. The "wastage rate" in British universities is comparatively low: the Robbins Committee found that of under-graduates entering in 1957 only 14% left without success, although the percentage differed widely between universities and between faculties, from 4 and 7% in Oxford and Cambridge to as much as 34% in one civic university, and from 12% in arts and 15% in science to 21% in technology. A wastage rate of one in seven is not high compared with two to five in France and one in two in the USA, but given the selectivity of admissions to British universities it is unnecessarily high, and wasteful both of student time and emotional energy and of public money. No doubt a large part, even of the straight academic failure, is due to non-academic, emotional and psychological difficulties, and methods adopted to overcome these will be considered in the next chapter, on student welfare. But no less than 82% of the 1957 intake's wastage was classified as due to "academic reasons" and, given the fact that British university students are selected for their "proven" ability to take a degree, was at least in theory avoidable.*

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* *Robbins Report*, pp. 190–2; since the above was written, the UGC has collected information on the "Progress of Under-graduate Students in Universities in Great Britain who would normally have graduated at the end of the Academic Year 1965/66" (now published by HMSO as *Inquiry into Student Progress, 1968*, Table 10). This gives failure and withdrawal rates for only three of the New Universities (those with graduates in that year): At Keele no students failed the degree, 6.2% withdrew during the course because of academic failure, and 4.6% for other reasons; at Sussex 0.9% failed, 1.9% withdrew for academic and 4.5% for other reasons; at York, 2.3% failed, 5.1% withdrew for academic and 5.6% for other reasons; compared with the averages for English Universities (British in brackets), failed degree 1.3% (1.4%), withdrew for reasons of academic failure 8.4% (9.5%), and for other reasons 2.5% (2.4%). I am indebted to Mr. R.C. Griffiths, Deputy Secretary of the UGC, for a preview of these figures.

Table 10. PART I OR PRELIMINARY EXAMINATION RESULTS, 1967 (1966 Intake)

Percentage

	Passed	Recouped	Failed	Withdrawn
East Anglia				
Arts	93	5	1	1
Social Studies	85	14	1	1
Pure Science	74	19	6	1
Total	83	13	3	1
Essex				
Arts	92	4	2	2
Social Studies	86	6	4	4
Pure Science	58	20	11	11
Total	80	10	5	5
Keele (1950–63)				
Foundation Year	86	7	6	1
Kent		See below[1]		
Lancaster				
Arts	95	3	1	1
Social Studies	83	14	–	3
Pure Science	75	21	1	3
Total	85	12	1	2
Sussex				
Arts	86	10	3	1
Social Studies				
Pure Science	83	12	5	–
Applied Science				
Total	84	11	4	1
Warwick				
Arts	84	8	3	5
Social Studies	75	22	–	3
Pure Science	80	9	6	5
Applied Science				
Total	81	10	4	5
York				
Arts	–	–	–	–
Social Studies	92	1	7	–
Pure Science	89	–	10	1
Total	90	1	8	1

Note: The "Withdrawn" column refers to those students who withdraw for reasons other than academic failure, e.g. illness or family reasons. It did not prove possible to obtain comparable figures for such withdrawals for all years, but the majority of "wastage" from all causes takes place during the first year and especially after the Part I or Preliminary Examination.

1. The Vice-Chancellor and Registrar of the University of Kent supplied but refused to permit publication of their Part I Examination results. No reason was given, but it is perhaps not irrelevant that the total of the last two columns was considerably higher than that of any other New University.
2. No formal University Part I examinations.

All universities are concerned about these problems, and not least the New Universities. The latter have all adopted the now common practice of a resit of the Preliminary or Part I examination, and in all except Kent and York most of the few initial failures are able to recoup, as is shown in Table 10. Partly because of this and the arrangements for close staff-student relations, academic supervision and general welfare advice to be discussed in the next chapter, wastage rates are kept low, as is shown for the first and final years in Tables 10 and 11. Lastly, performance in the final assessment is fully comparable with other universities, as is shown in Tables 11 and 12. Nothing of course can prevent some academic failure and withdrawal for non-academic reasons, but the New Universities have managed to reduce it to within tolerable limits.

Table 11. FINAL EXAMINATION RESULTS,
1967 (1964 Intake)

Percentage

		I	II.1	II.2	III	Pass	Fail
East Anglia	Arts	5	30	52	12	–	1
	Social Studies	6	22	45	22	2	3
	Pure Science	8	20	42	18	10	2
	Total	6	24	46	18	4	2
Essex	Social Studies	–	21	55	24	–	–
	Pure Science	16	19	30	27	8	–
	Total	9	20	41	26	4	–
Keele[1]	Arts	3	29	51	14	3	
	Social Studies	1	26	43	25	5	
	Pure Science	7	18	32	25	18	
	Joint	4	26	43	23	4	
	Total	4	25	44	21	5	1
Lancaster	Arts	1	17	59	20	3	–
	Social Studies	2	17	41	32	5	3
	Pure Science	6	24	29	18	23	–
	Total	1	18	53	23	4	1
Sussex	Arts	2	36	50	9	2	1
	Social Studies	5	39	47	5	4	–
	Pure Science	10	16	25	26	18	5
	Applied Science	–	13	37	13	37	–
	Total	6	29	39	15	9	2
York	Arts	7	45	38	6	2	2
	Social Studies	4	38	52	6	–	–
	Pure Science	6	9	38	22	9	16
	Total	6	39	42	8	2	3

[1] 1954-66 (Intakes 1950-62).

A final feature of the teaching system in British universities, which attracts much adverse criticism from the press and the public, is the shortness of the teaching year and the small use which students make of vacations. Practically all the universities operate three terms of about ten weeks each, except for Oxford and Cambridge where they are eight weeks each.

Table 12. FINAL EXAMINATION RESULTS:
INTER-UNIVERSITY COMPARISON

Percentage

University Group	Year of Graduation	I	II.1	II.2	III	Pass[1]
New Universities ..	1967	6	29	45	15	5
Cambridge	1959	6	25	37	23	9
Oxford	1959	8	57[2]		34[3]	1
London	1959	8	22	38	18	14
Larger Civic	1959	8	21	30	11	30
Smaller Civic	1959	4	21	38	18	19
Wales	1959	7	24	25	7	37
Scotland	1959	7	30[2]		4	59
All Universities (other than in Medicine and Dentistry)	1962	7	53[2]		13	27

1. This category includes students who entered specifically to read for ordinary or pass degrees.
2. This figure consists of students awarded an undivided second class degree.
3. This figure consists of students awarded third and fourth class degrees.

Thus under-graduates spend some thirty weeks or less in full and intensive work at the university and have about eighteen weeks in which to do as they please. (Post-graduates, of course, spend about as much time at the university or visiting libraries and archives as the staff, and are generally expected to take no more than a month's holiday during the year.) In theory under-graduates are supposed to spend a large part of the vacations on reading and preparation for the following term, but the Hale Committee in an interim report on *The Use of Vacations by Students* found that in the summer vacation in 1961 over half, 53%, of the 2,000 students in the sample survey spent on average an hour or less a day on academic work, 31% from one hour to three hours, 11% from three to five hours, and only 5% more than five hours per day. Maintenance grants are not meant to cover vacations, and many students claim that they have to take paid work or prefer to take it rather than be supported by parents. 62% of the sample took paid employment not related to their academic course, three-quarters of these for more than four weeks, the median being 6.3 weeks. Very few students, 8.5%, received any teaching during the vacation, only 5% made use of university laboratories, 19% of university libraries (fewer than half of these for more than six days), and 10% of other university premises. The Hale Committee commented laconically, "We cannot regard the present situation as satisfactory," and recommended that tutors should give more guidance on vacation work and that Local Education Authorities should be sympathetic in awarding supplementary grants for vacations.* (In fact, in England and Wales as opposed to Scotland it is normally fairly easy to obtain a grant for a period of the vacation actually spent in work at the university, but this does not solve the problem of the majority of students who wish to work at home or in nearby libraries.)

There are two main ways of dealing with this problem. One is to set special written work to be handed in at the end of the vacation or special preparation to be examined by a test at the beginning of term. Individual schools and departments in the New Universities have tried this, but to no greater an extent than in the older ones, and in general there is a reluctance amongst academics everywhere to set special work in vacations, which they feel ought to be devoted to general background reading for which there is little time during term. The other way is to extend the official time spent by students at the university, either by lengthening the term or by inserting an extra term in the long summer vacation. The only New University to adopt the latter as a general policy is Kent, where a four-week term for reading and private study with a minimum of staff supervision has been introduced in late July and August. Student reaction was uniformly against it, though on the interesting ground that the lack of formal teaching and incentive made it an occasion for frivolous social activities which one section found useless and the other frustrating from the point of view of serious work. Elsewhere only individual departments, such as the Chemistry and Physics Department at Lancaster, have adopted the long vacation term. No New University has taken the step of officially lengthening the term, but Stirling, which has adopted — a genuine innovation for Britain — the American system of two semesters (of fifteen weeks each) instead of the three traditional ten-week terms, has taken the opportunity of "expecting" the students to come up a fortnight early for the second semester, commencing in mid-January instead of early February, for a period of private study.

The universities are under pressure from the Government and the UGC to consider ways of increasing the use of their expensive buildings and equipment. One way, already being imposed by the Department of Education and Science on some of the Colleges of Education, is known as the "Box and Cox" system, from the Victorian musical comedy by Gilbert and Sullivan in which two lodgers used the same bed in shifts by night and by day. In this system the students are divided into, say, three groups, only two of which are in residence at any one time, and by alternating the combination of groups (most easily by each group attending for four out of six terms during the year) the premises can be used almost continuously, while the students (and also the staff) spend as much time at the university and in vacation as before. A Sub-Committee of the Committee of Vice-Chancellors and Principals, under the chairmanship of the Vice-Chancellor of East Anglia, is studying the feasibility of the six-term year. Its difficulties and implications belong more to Chapter XI, on Planning and Finance, and will be dealt with there. Its only relevance here is that its adoption would effectively prevent any lengthening of the university year for any group of students, and thus frustrate what is perhaps one of our most-needed reforms.

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* Hale Committee, *Interim Report* (1963), pp. 4–5, 9–10.

180

Finaly, under the heading of teaching methods we must mention the appointment in most of the New Universities of academic advisers, supervisors, or tutors to the individual student, a device which has important implications for all the questions discussed in this chapter. Academic advice and supervision, however, are so inextricably linked with the non-academic, moral or welfare guidance of students that we must leave this to be discussed in the newt chapter in the context of student welfare.

IX

THE ROLE AND STATUS OF STUDENTS

More nonsense has been written, talked and occasionally shouted about the rights and duties, powers and responsibilities of students than about any other subject connected with universities. At one extreme there are those, chiefly a minority of taxpayers outside the universities, who consider that students are children, being expensively educated at the cost of the community, who should be seen but not heard outside the classroom. At the other, there are those, chiefly students themselves, though mercifully also a minority, who believe that students have a monopoly of wisdom and should not only have a major voice in the running of the universities but should use it to make them support whatever political cause or party they have chosen for the moment to favour. In between there are any number of positions and opinions, from the benevolent despotism favoured by some Vice-Chancellors to the one-man-one-vote democracy — no matter how ignorant, silly, idle or vicious the man — favoured by a small number of vociferous students. "Student power", "the student revolution", the sensational press which is interested in students only when they are rioting, taking drugs, or advocating sexual promiscuity, have had the expected result of provoking an equally violent and stupid anti-student reaction in some sections of the public.

Keeping a sense of proportion and steering a rational course through these stormy seas of irrational emotion is difficult indeed, and not all the New Universities have escaped a buffeting. It is as well at the outset to remind ourselves of a few of the more important guidelines in the perspective. In the first place, very few students fit the image of the marching, demonstrating, rioting, drug-taking, sexually promiscuous, or even long-haired and untidily dressed paradigm of the popular press. The vast majority, in fact, are very ordinary young men and women in clean, conventional clothes, intent on getting a degree in order to fit themselves for a career and a secure and comfortable niche in the community. They are, if anything, too career-minded, too conformist, too apathetic about the running of their university and of the country, and about the state of the world. Student unions and other representative bodies universally complain of the difficulty of assembling a quorum of members except in times of crisis — and crises have sometimes been fomented in order to "put some life into the Union". According to the retiring President of the National Union of Students", only 22,000 out of a total of about

182

half a million express enough interest to belong to student political organisations".* What evidence there is suggests that sexual freedom is no greater than it was between the Wars, the illegitimacy rate is no higher, pre-marital intercourse takes place mainly between "steady" couples with an "understanding" that marriage will almost certainly follow, and the percentage of the truly promiscuous, particularly amongst the women, is minute. Drugs, almost wholly in the "soft" form (cannabis and LSD rather than the hard, addictive opiates and cocaine) are a slightly larger problem than they were, as they are amongst other young people of student age, but the numbers known to be experimenting with them are infinitesimal. If anything, students are much less of a separate group and therefore much less of a separate problem than they ever were before. Some of the seemingly nonconformist turn out to be conforming rigidly with the mores of their own age group in the population at large.

In the second place, so-called "student unrest", in so far as it takes the form of a demand for greater consultation and participation in university government, has to be seen in the context of the old-established tradition in Britain that a university is not a school in which the teachers impose their dogmatic views and rules of conduct upon the pupils but a community of scholars, senior and junior, devoted to the common and mutually illuminating pursuit of learning. Such a community is not, on the one side, an oligarchy, in which the qualified few make all the decisions and the unqualified many must blindly obey; nor is it, on the other, an ochlocracy, in which the numerical majority of students has the "democratic" right to impose its will on the minority of academic staff. It is a professional community of unequals, in the sense that the older and if not wiser, at least more experienced, devotees of learning have the right and the duty to lead, influence, and explain their expertise and ways of thought to the younger and less experienced members. The professional element is easily forgotten, especially by student radicals. It means that the professors and lecturers have a duty over and above that to their students, or even to the wider community of the nation which pays them: a duty to their subject, and to scholarship and truth in general, which only they are qualified to perform. In matters academic, therefore, they cannot without loss of integrity and professional responsibility give up control to the unqualified, above all to that particular section of the unqualified which has a vested interest in making qualification easy of attainment. It would be intolerable if, in matters of professional skill, the apprentices could override the masters. Academic standards, the maintenance of which the wider community of the nation pays for and has the right to insist on, demand that only fully qualified academics shall be in a position to determine and guarantee them.

In matters non-academic, however, which naturally make up a large part of university life and most of the questions which are in dispute between the authorities and the student body, there is much more room for discussion and negotiation. Here there has been an undoubted change in the climate of opinion since the days when the university and especially its administrative head were assumed to stand *in loco parentis* and had the right and the duty to exercise all the moral authority and control of the parent. Standing in place of the parent was always a curious concept, since most universities tried to exercise — and some, such as the Oxford and Cambridge Colleges, still exercise — a degree of control over the moral conduct of their undergraduates which few parents ever claimed over their children of 18 years old and upwards. Indeed, it is doubtful whether the concept would legally justify any control over the substantial minority of students over 21, and if, as the Committee on the Age of Majority has recommended, it should be reduced to 18, educational institutions which rely on this outmoded concept for their powers of discipline will find the ground disappear from under their feet. That Committee, however, has very sensibly pointed out the only safe foundation on which they can build:

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* Geoffrey Martin, "Students want to Participate", *Financial Times*, 11 March 1968.

> We should like to make it clear that we are not envisaging a situation where all college rules and structures would magically wither away on the age of majority going down to 18. Any collective body, whether it is an ironfoundry or an old people's home, has to have arrangements to make sure, first, that people do what they are there to do — in this case, study; and, second, that they do not make each other's lives unbearable by an unreasonable exercise of individual freedom. Colleges will go on demanding that students read books, go to lectures, write essays and stay in a fit state to do so; they will continue to require that the young people do not enjoy themselves with trumpets and strumpets to the point where it keeps other people awake. But the confusion that springs from the *in loco parentis* situation will be removed. There will no longer be a vague conviction that a college should look after a student in every personal way, no longer a misty territory where it is clear that the Dean does not make a man cut his toenails and does make him sit his exams, but most things in between are a matter of dispute. By not being forced to act like parents, we hope that colleges will all the more effectively act like colleges; and that students will the more easily respect this situation and abide by its conditions.*

This is a complete answer both to those who think that students are still dependent children and to those who think that they are adults but responsible to no-one but themselves. Whether or not the age of majority is reduced to 18, the *de facto* situation is that students are already young adults and will insist on being treated as such. If that is so, they must equally, with the rights, accept the responsibilities of adults, which means that they must abide by agreements fully entered into, such as the agreement to accept and do the work associated with a place in an educational institution heavily subsidized by the rest of the community, in most cases with a grant covering their fees and maintenance as well, and that they must allow as much freedom to study and conduct their affairs to other members of the institution as they claim for themselves. In short, they must, just as much as the members of any other voluntary adult society, a sports club, a trade union or a professional institute, submit themselves to the agreed rules of the society or resign — provided, of course, that they have had the same opportunity as the rest to be consulted over the drafting and amendment of the rules, and the same right to see that the rules are applied in a fair and proper manner.

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* *Report of the Committee on the Age of Majority* (London, HMSO, Cmnd. 3342, 1967), para. 463.

It is over these provisos, participation in the drafting of the rules — the making of university policy — and in their application — the disciplinary process — that most disputes have arisen. Much of the difficulty has arisen from confused thinking, fear and misunderstanding: the confusion, on both sides, between academic matters, on which students may be consulted but cannot properly have the sole determining voice, and non-academic matters, on which they are as qualified to speak as the academic staff; the fear on the part of students of being treated like children, and the fear on the part of the staff that the students intend to take over the whole government of the university, academic and non-academic, and the mutual misunderstanding which arises when well-meaning but narrowly paternalist university authorities confront equally well-meaning but self-righteously democratic student representatives.

The New Universities have not been free from student unrest. Lancaster in 1965 had a student strike against increased lodging fees — much more against lack of consultation than against the amount of the increase — which was called off as soon as the students were consulted. Keele has had an almost continuous rumbling of discontent over the disciplinary powers of Wardens of Halls. York has had a student consumers' strike against the college refectories. In Kent relations between the Vice-Chancellor and the students have been somewhat strained by his explicit opposition to their "alleged rights" and what they consider his "prevalent paternalism". In Essex, most famously, a recent meeting of 800 students voted to set up a "free university" — a sort of continuous mass seminar on chemical and biological warfare — in protest against the Vice-Chancellor's suspension of three students who led a demonstration against a speaker from a Government research establishment. In Sussex some anti-Vietnam students threw red paint over an American diplomat, and the same "vociferous minority" led by the same Californian student, demanded the resignation of Lord Shawcross either from all his business directorships in any way associated with the American war effort or from the Chancellorship of the University. Even in East Anglia which prided itself from the beginning on associating students with all major decisions, the Vice-Chancellor had to report that all had not been peace and harmony:

> When we were a very small community, consulting with the student body was an easy matter of personal and casual contact; but when we approached a community of a thousand strong even the heroic efforts of our talented Dean of Students and my other colleagues, the Deans of Schools, proved, from time to time, insufficient. The students for their part did not easily comprehend that the growth of the community made it no longer possible for them to conduct their affairs on the basis of direct democracy and that they must shift to a system of representative government in which they must trust their elected officers to speak for them just like any other estate in the University community. The result was a period of protests, petitions, and manifestos which was uncomfortable for us all.*

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* Frank Thistlethwaite, *Fifth Annual Report of the Vice-Chancellor, 1965–1966* (University of East Anglia, 1966).

A third guideline in the perspective is that if students are to be treated, and to treat themselves, as adults, then they must be allowed the same freedom to protest, demonstrate and generally make their political views and opinions known as other citizens — with the same acceptance, it naturally follows, of the consequences of their actions. A problem here is that a considerable section of the general public, especially in areas with no previous experience of university students, not only fails to distinguish between the small visible minority of rowdy and irresponsible students and the large majority of quiet and sensible ones, but seems to think that those who are paid out of the public purse have no right to opinions at all. An ex-Army officer, landowner and County Councillor in East Sussex wants to make the County Council's grant to the University depend on the good behaviour of *all* the students:

> In view of the recent regrettable exhibition of rowdyism and downright hooliganism by students, which has shocked most ratepayers, I think the level of the grants wants looking into.*

This curious belief, that those whom you pay are thereby reduced to the condition of helots or slaves with no right to opinions differing from your own, would lead to the absurd position that civil servants, doctors, lawyers, university professors, public and even private employees of all kinds could not express themselves at all. No doubt this belief was held by some Victorian employers of labour, but they have long been forced to abandon it by the trade unions. That it should be clung to so long in relation to students is an indication of the psychological reluctance of many people to abandon the notion that students are rebellious children. The fact is that many students, though by no means all, are more mature and responsible than many of the older generation, and certainly more concerned about the problems of peace and war, world hunger and poverty, and the underprivileged in our own society. If they do not join the traditional political parties in large numbers (and whose fault is that?), they are conspicuous in all the anti-war movements of our time (however misguided some of their methods), they volunteer in large numbers for Voluntary Service Overseas in the underdeveloped countries, and some of them (including Sussex students) are even thinking of abandoning the traditional "rag days" beloved by former generations of students in favour of direct personal service to handicapped children, youth clubs, old age pensioners and the like.**

On the other side, it should be said that students have no more right than anyone else to impose their views on others, even on the Chancellors and Vice-Chancellors of their own universities, to break the law or disturb the peace without being punished, or to escape from their responsibilities and the consequences of their actions. Students, who are already much freer than the rest of the working population to dispose of their time and to come and go as they please within very wide limits, tend to resent even those limits, and to demand that attendance at classes should not be compulsory, or indeed attendance at the university at all: at Kent students have complained that eight overnight *exeats* a term are too few, while at nearly all the New Universities it is difficult to ensure attendance in the final summer term immediately before and after the Final Examination. Amongst a few there seems to be no sense of an obligation to do the work for which they are paid, at least in the place where they are paid to do it — a curious inversion of adult responsibilities. The same is true of those who talk of "striking" over every slight grievance: it does not occur to them that workers who strike forfeit their wages, and they would be scandalized (justifiably, perhaps) if their grants were cut. Nevertheless, the great majority of students do attend, do not go on strike, and generally work a 35 to 40-hour week, though at hours unseen by the general public, which is aware of the rag-day frolics and the political demonstrations but not of the early morning candle and the midnight oil.

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* *The Guardian*, 7 March 1968.

** Pauline Clark, 'Social Workers May Oust Rag Days', *The Guardian*, 29 March 1968.

One final guideline in the perspective — and it is as much a plea from the old to the young for tolerance and consideration as a matter of principle — is that students are temporary members of the academic community, whereas the staff are permanent ones, and have to live with the consequences of the twists and changes of policy demanded by each new generation of students. If changes are to be made which may affect the physical layout of the institution and the material comfort of the inhabitants for many years to come, the permanent members have a right to insist that they should not be undertaken lightly, or at the whim of some small and irresponsible group who will not have to suffer the consequences. In a very real sense the staff are the only guardians of the rights of students yet unadmitted, whose well-being, and that of the whole university, may be affected by thoughtless decisions taken today. That is the chief reason why the staff, even in non-academic matters, should have a larger voice in decision-making than their numerical vote in a democracy of social equals. If the essence of democracy is that those who most feel where the shoe pinches should have most say in choosing it, then democracy in a university demands that votes be weighed rather than counted, and that the votes of the staff should weigh rather more heavily, though not overwhelmingly more, than those of the students.

Against this perspective view of students' rights and responsibilities, what have the New Universities done to improve the role and status of students in the academic community, to further student participation in university government, to produce a just and rational system of discipline, to foster the present and future welfare of their students, and to maintain harmonious relations between junior and senior partners in the enterprise of learning? First of all, they all started with an enormous fund of goodwill and a determination to avoid the obvious errors of some of the older universities. In this they were encouraged by the Robbins Committee, which considered that "every effort should be made to provide opportunities for ... contact between staff and students"; and by the University Grants Committee, which welcomed the arrangements being made in them for such contact and for the "pastoral care" of students.* Both Committees, however, were commenting before the current movement of student demand for greater participation in university government, and not only ignored the problem but were still thinking in what must now be seen as old-fashioned paternalistic terms. The UGC, for example, recognized "the growing need of under-graduates for help and guidance in non-academic matters" but recommended that not the students but "those who accepted responsibilities for 'pastoral' care, such as wardens of halls of residence, should have some representation by right in academic councils such as Senates". The New Universities were thus left with no more specific guidance than the rest to cope with the coming wave of "student unrest", and adopted a variety of attitudes and solutions according to the varying educational philosophies and personalities of their leading administrators and academics. In none of the English ones of the 1960's was specific provision made in the Charter or Statutes for student representation on Court, Council or Senate (or their equivalents), although in revised Charters and Statutes currently being negotiated for some older universities, such as Manchester, such provision was being made in the case of Court. Only in Keele, in its second Charter and Statutes of 1962, was provision made for two student representatives on Court, and in Stirling, which came much later than the rest, for three representatives of the Students' Association on Conference (the Scottish equivalent of the English Court). Court and Conference are large, honorific bodies without substantial powers in practice, and it is surprising, and perhaps a measure of the lack of interest in the question so recently as the early 1960's, that student representation in most of them was not even thought of.

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* *Robbins Report*, pp. 193–4; UGC, *University Development, 1957–62*, pp. 109–10.

The lack of statutory representation on the central governing bodies does not mean, however, that students have necessarily been excluded from participation at that level. In all the New Universities students are represented to a greater or lesser degree on committees of Senate and/or Council, normally on all those dealing with matters which affect students' material welfare, such as the refectory, accommodation and lodgings, and sports and recreational facilities committees. Occasionally they are represented on more academic committees, such as the Library Committee at Lancaster and Warwick, and at the latter even on the committee which organises the examinations. The main areas in dispute, as one would expect, are the committees dealing with discipline, and Council and Senate themselves, and it is the Universities' attitudes towards students appearing on these which divide the "progressive" sheep from the "reactionary" goats.

Students are involved at some stage in the disciplinary process, that is, in the "social" disciplinary machinery, not the academic, at East Anglia, Essex, Keele, Lancaster, Sussex, Stirling and Warwick. Only at Kent and York, with their benevolently paternalistic regimes, have they been refused such representation. Elsewhere the degree of involvement varies considerably. At Sussex and Lancaster the students themselves run most of the disciplinary machinery, at any rate for all but the most serious offences; at Sussex through the elected Student Disciplinary Officers, something between a policeman and a lay magistrate responsible for a group of lodgings, and through a student majority on the lesser disciplinary committees; at Lancaster through the College Junior Common Room disciplinary committees, only the more serious offences going before the higher College committees on which the Dean and the Tutors sit alongside the student representatives. In East Anglia and Essex, by contrast, most cases are dealt with summarily by the Dean of Students, only appeals and the more serious cases going before the Disciplinary Committee, on which students are substantially represented. At Warwick, by another sort of contrast, less serious offences are dealt with by the Hall Disciplinary Committee, composed entirely of students, but appeals and the more serious ones go before the Senate Disciplinary and Appeals Committees, composed entirely of academic staff. It might be thought that the collegiate system would offer an automatic opportunity for associating students with staff in disciplinary matters, as it has done at Lancaster and, in the quasi-collegiate hall, at Warwick; but at collegiate York and Kent discipline remains firmly in the hands of the Vice-Chancellor and the Provosts or Masters of Colleges. In this, curiously enough, they are nearer to the Oxford and Cambridge tradition than are Lancaster and Warwick. Between the first two there are nevertheless differences of disciplinary practice: in Kent accused students have a right to a hearing by the Disciplinary Board: in York they do not. Which system of discipline is the more effective in practice, the paternalistic or the democratic, it is difficult to say. Kent has experienced grumbling and strained relations but no serious student unrest, whereas York has had a student boycott of the refectories. Lancaster and Sussex have had exceptionally good relations between the staff and the main body of students, but while Lancaster has had no serious unrest, Sussex has had more than its share from what the Students' Union itself calls "a vociferous and unrepresentative minority". Yet in the final analysis short-term effectiveness is beside the point. The disciplinary machinery is part of the educative process of a university, and if one of the aims is to produce responsible, independent, self-disciplining adults rather than unquestioningly obedient and conformist grow-up children there can be little doubt which system is the more successful. According to the National Union of Students in 1966, "few Universities and Colleges at present have any form of student representation within their disciplinary mechanism".* It would therefore seem to be sufficiently rare to be considered a genuine innovation.

As to more general staff-student relations, nearly all the New Universities have some arrangement, formal or informal, for regular meetings between student representatives and the Vice-Chancellor or his representatives. In East Anglia, Essex and Sussex these naturally fall within the province of the Dean of Students or the Senior Tutor. Elsewhere the Vice-Chancellor himself tends to be more involved. Most British Vice-Chancellors pride themselves on being accessible to students, and would certainly not refuse to see the President of the Students' Union or its equivalent. The value of such meetings, whether formal or informal, however, depends upon the personalities involved, especially that of the Vice-Chancellor. At one New University there used to be regular weekly meetings between the Vice-Chancellor and the President of the Union, but they were not a success "because the V.C. did all the talking". Like joint consultation between management and workers in a factory such meetings can be genuinely helpful, but they can equally become part of the apparatus of a spurious paternalism. Where the student representatives themselves are easily seduced by the benevolence and hospitality of paternalist authorities, they may be accused of becoming "Uncle Toms" and repudiated by their constituents.

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* *Op. cit.*, p. 13.

The ultimate solution to all problems of staff-student relations advocated by students' organisations everywhere, and not least in all the New Universities, is, of course, representation on university governing bodies, especially on Senate. Here most academics would consider that students were finally crossing the Rubicon between non-academic decision-making, in which they ought to participate, and academic, in which they ought not. The problem, however, is not nearly so simple as that. Senates deal with a range of questions as wide as all the activities of a university, and there are few academic matters which do not have non-academic implications. Moreover, while it would be against natural justice for students to be judges in their own cause, as in the matter of individual examination and assessment, it is perfectly fair and proper that they should be consulted over the general conduct of academic affairs. Whether such consultation need take place in Senate is, of course, open to question, and it would certainly be opposed in those Senates which have only in recent years opened their doors even to non-professorial staff. Nevertheless, a compromise has been found possible in three of the New Universities. In East Anglia, Sussex and Lancaster, one or two student officers have been invited to attend Senate for specific items of business, usually those connected with student welfare. In Lancaster, for example, the Students' Representative Council receives a copy of the Senate agenda, and the President and Secretary ask to attend for items which they select. Senate, however, decides whether and when to call them in, and normally has a preliminary discussion of the items beforehand. (They are also invited to Council on the same terms). One side effect of this is that student matters get priority and far more discussion than others, which some may think is as it should be.* Now Sussex has gone a stage further, and besides inviting two student representatives to Court and Council as observers (though they may be asked to withdraw from the latter for certain items, notably those concerning the confidential affairs of individual members of staff), has arranged for student membership of Senate (although this cannot be formalized until the Statutes are revised, and approved by the Privy Council):

> The President and Vice-President of the Union, one other student member of the Social Policy Committee (the main joint staff-student committee), and four other students nominated by the Union from amongst the Chairmen of the School Common Rooms (two to be from the Arts Schools and two from the Science Schools), will be co-opted annually as full members of the Senate, although a small section of certain Senate agendas may contain items selected by the Chairman for which the student representatives will be asked to leave.

The last clause safeguards the essential distinction between professional, academic and other matters, and, indeed, the difference between "full membership" on these terms and attendance by invitation for certain items might be thought more symbolic than real. Sussex, however, claims that the clause has not yet been invoked, and that the students have contributed usefully to all discussions, academic as well as non-academic. The success of the move will certainly be closely watched by the other universities.

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* Lancaster now invites student representatives to full meetings of the board of the Senate, as explained above, Chapter V.

One of the most difficult problems arising from the admission of students to governing bodies and committees is that of confidentiality. Those of us who have had experience of negotiating non-professorial representation on governing bodies know that this word can be used as a barrier to any widening of membership, and have learned to outflank it by the demand to extend the area of confidence to include all members of the university staff. It must be admitted, however, that there is a very real problem where members of governing bodies and committees do not uphold the confidence placed in them, and great damage can be done to individuals and to the university's good name and business dealings if facts, opinions, plans and discussions are revealed, or leak out prematurely. Confidentiality is matter of tact, experience and judgement, and although not all members of staff display these qualities in a superlative degree, there are many students who have not begun to acquire them. In Lancaster, for example, extremely bad relations with the local landladies resulted when students revealed to the local press that the University was negotiating its scheme of privately financed residences, although in fact this was in no way intended to reduce the number of students in lodgings. Again, a student magazine jeopardized a contract with a trader providing a shop on the campus by publishing criticisms of the manager made in a University committee. The danger of such breaches of confidence from the students' point of view is that membership of the affected bodies will be rescinded, or the students will be asked to withdraw whenever confidential items are discussed. It is fair to add, however, that such breaches have been few, and that most student representatives have risen admirably to the delicate task of maintaining a balance between what is genuinely confidential and revealing what ought not to remain secret.

On the more positive side, student representatives have played a very useful part on university committees, not merely in their "public relations" role of seeing fair play and reporting it back to their constituents, but in a contributory role of suggesting solutions to problems and improvements of services. In Lancaster, for example, students have suggested improvements to the refectory, medical and careers advisory services, run a survey to discover comparative demand for a swimming pool as against other facilities in Stage II of the Recreation Centre, and even initiated a Social Psychology Group which studied the pressures and stresses of the first examinations in 1965 and 1966 and produced reports of great value to the Part I Assessment Committee. They have also played a considerable part in planning the Colleges, through the Joint College Management Committees, and reciprocal membership of Syndicates and Junior Common Rooms. In East Anglia students have been associated with every stage of the planning process, and have contributed usefully to the development of the campus and curriculum.* In Sussex students are represented on the Buildings and Planning Committees, where they have made useful contributions, and have now been appointed to the School Joint Committees, where they can make recommendations even on the academic running of the Schools, though they are not on the bodies — the School Meetings, Subject Committees, the Arts and Science Committes, Examination Boards, Students'

*** Cf. Kathleen Gibberd, 'Where Students help to plan', *New Statesman*, 3 June 1967.**

Progress Committee, and so on – which make the actual academic decisions.

Student participation is naturally most concerned with non-academic matters, notably living conditions, residence, and material welfare in general, as well as with such aspects of academic matters as educational guidance, the emotional and psychological pressures affecting student performance, and advice about future opportunities and careers. Living conditions and residence have been sufficiently dealt with in Part II, Chapter I, Section (iii), above, but something must be said about the students' own organisation of their communal life. As we have seen, there are two different traditions of university organisation in Britain, the civic or unitary and the collegiate or federative. To these correspond two different systems of organising student life, the " one big Union " and the federation of Junior Common Rooms. The New Universities which have followed the unitary model, with only academic divisions between schools of studies and the like, Keele, Sussex, East Anglia, Essex and Stirling, have naturally tended to have the one big Students' Union also, while the collegiate ones, York, Lancaster, Kent and in this case Warwick, have equally naturally adopted the Junior Common Room system. The most active students everywhere are in favour of the one big Union, because this gives the activist few the largest share of power *vis-à-vis* the other students and the university authorities. It also gives them the largest control over the capitation fees charged for sporting and social purposes, which range from £8 to £18 or more a year per student, and which in Britain outside Oxford and Cambridge are collected centrally by the University (directly from the LEAs in the case of grant-supported students) and handed over to the students' representative bodies for the financing of central organising expenses and general social functions and for disbursement to student societies and clubs. Only in Oxford and Cambridge is it usual for individual students to handle their own moneys for this purpose and choose which societies they will support (of which the Union, strictly a mere debating and social club, is only one amongst many), and even there there is normally in each College a compulsory Amalgamated Clubs subscription for the support of College sports. The National Union of Students is strongly in favour of Union autonomy, by which it means complete control by the elected few in each institution over all student activities and finances.* Any other arrangement it regards as an " undemocratic " device to divide and rule the student body. Yet it completely ignores the very real problems which arise in the one big Union, except in so far as they generate demands for more power and privilege for the few. In the first place, the one big Union puts an almost intolerable burden of work and responsibility upon a tiny group of student officers and committee members, to an extent which undermines their academic work and jeopardizes their degrees and careers. The response of the NUS to this problem is not to divide the work and delegate the responsibility, but to demand a " sabbatical " year, free from academic work and financed by the University or the other students, for the President of the Union, and, once they have achieved that, for the Secretary, Treasurer and other officers. A sabbatical year for the President they have achieved in a score of universities, including Keele and East Anglia, and for more than one officer in Sussex, Sheffield and Belfast.* Meanwhile, the second problem is that, while a tiny minority at the centre of affairs is overburdened, the vast majority of students in a large Union take little or no part in student activities, and come to feel less and less in membership of the student community. It is possible now for a student to spend three years in a University and never to meet one of the student officers responsible for spending his money. Even more ironically, while the university authorities everywhere are making great efforts to improve contacts with and pastoral care of the individual student, student officers and committee members tend to dismiss the quiet, withdrawn, apathetic student, who most needs human contact and support, as a "non-joiner" whose lack of participation is entirely his own fault. The third problem arises from the previous two, and concerns the lack of democratic supervision and control of the ruling minority, once elected, by the apathetic and unvigilant majority. There is, sad to say, in many large student Unions a sort of petty corruption which consists of perquisites, privileges and expenses for the few paid for out of the pockets of the many: free meals, free tickets to student functions, private bars with free drinks for committee members and their friends, and free trips to neighbouring university functions to enjoy the same free hospitality. At one large civic university there was even a dress allowance for the women members of the Union Executive to enable them to shine at social functions. Criticism of such expenditures is always resented and repudiated on the grounds that student officers do the work and ought to be recompensed, but since they are elected for their public spirit and eagerness to serve rather than for pecuniary reward it is difficult to accept this argument. The worst feature of the practice is not the injustice to the majority of students, whose money is being spent and whose service neglected (at one student ball I attended at a large civic university the refreshments for the *hoi polloi* were delayed while the student organisers finished their private dinner), but its corrupting effect on the minority. They come to believe that the world outside is run on the same principles of expense account living, and they look for careers in sectors where they think they will get it.

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* Cf. National Union of Students, ***Representation, Discipline and Autonomy*** (NUS, 1967).

No doubt the only solution to these problems where large Unions already exist is greater participation and democratic vigilance by the majority of students, but this is probably a forlorn hope. More apposite is to provide an organisational framework in which the work and responsibility are more widely distributed, and in which the ordinary student has greater access to the centres of activity, for purposes both of democratic control and of participation in student affairs. Those New Universities which have adopted the one big Union have already sold the pass, and have been saved from the worst excesses of centralized power and corruption only by the smallness so far of the student body. The best hope lies with the collegiate New Universities, where the work and responsibility are shared out amongst a number of Junior Common Rooms, each with its own set of officers and committee members, and in which the ordinary student has a far better chance of knowing his elected leaders, taking part in collective decisions and participating in student activities. This arrangement is not, as is often claimed, a device designed to "divide and rule", and to preclude the representation and expression of a common student view for the whole university. Far from it: the federal body representing all the Junior Common Rooms, usually called the Student Representative Council, can concentrate on matters affecting all students and on putting the student viewpoint to the university administration without the distraction of day-to-day management of routine affairs. The President and officers of the SRC are not so overburdened that they neglect their academic work, and they are more effectively responsible to another set of activists in the JCRs who have a different vested interest from themselves.

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* NUS, *Student Participation in College Government*, p. 9.

It cannot be said that the federal system was welcomed by the articulate students in those universities which have adopted it. In Lancaster the leading organisers tried very hard to give as much power and money as possible to the SRC and as little as possible to the JCRs, while at Warwick where there is still only one hall shared by all the students, they make no secret of their preference for a single Union. The articulate and organising, however, have their own reasons for preferring the concentration of power and finance, and in all the truly collegiate New Universities the system is now accepted and seems to be producing exactly the result, a harmonious and equitable distribution of power, responsibility and participation, which has been claimed for it. The real test will come, of course, when the New Universities grow to the same size as the larger civic ones, when the different effects of the one big Union and the federal system will appear in full scale. Meanwhile, the federations of Junior Common Rooms at Lancaster, York and Kent are a genuine innovation with a message for student organisation everywhere.

The problem of the shy, withdrawn, seemingly apathetic student who plays little part in student affairs and is scarcely noticed by the staff until he, or frequently she, fails an examination, seeks medical treatment for complaints of psychological origin, or gives notice of withdrawal from the university, has been exercising university teachers and administrators for some years now. The increased concern is generally put down to the increasing size of universities and the greater opportunity for the student to feel lost in the crowd, and to the increasing number of "first-generation" students who come from families and social backgrounds without experience of higher education to prepare them for the loneliness of "working on one's own". The increasing size of universities cannot be gainsaid, although some have long been much larger than ones which are now feeling this problem acutely, but the "first-generation" student is something of a myth — a large proportion of students in the past were always first-generation — or, rather, a euphemism for working-class student, and, as we saw in Chapter II above, the relative proportion of working-class students is probably no greater than it was before the War, although the absolute numbers are of course larger. Whatever the reason for it, the increased concern is to be welcomed on both moral and economic grounds, since "lost" students are a loss to themselves and to the community at large. Anything which can reduce the wastage both from socio-psychological causes and from academic failure (which is often the same thing in disguise) is a human and educational gain. The widely accepted solution to the problem is in general greater staff-student contact, so that the staff know the students personally and can receive early warning of emotional, psychological or academic difficulties, and in particular some form of individual "pastoral" care such as that long practised by the "tutor" (as distinct from the academic supervisor) at Cambridge and the "moral tutor" (as distinct from the academic tutor) at Oxford. At the general level, all the New Universities have increased the opportunities for staff-student contact by adopting joint refectories where meals are taken in common, and Essex has even abolished separate Senior and Junior Common Rooms. So too did Sussex in its first communal building, Falmer House, and at Lancaster, the bars of all the Colleges are open to both senior and junior members. At the particular level, in recent years moral tutorial systems (not to be confused with the tutorial teaching system in small discussion groups) have been widely adopted in other universities, where they have proved to be of great help in reducing emotional stress and student wastage.

The adoption of the same device by all the New Universities cannot therefore be considered an innovation, except to some extent in Keele, where it came in from the beginning and somewhat earlier than in some of the older civic universities. There the jointly taught discussion groups in the Foundation Year were seized on as a basis for further contact with the student, who was required to choose one of the three teachers to be his "General Tutor" for the rest of his under-graduate career, who would keep an eye on his academic progress and to whom he would turn when he was in any kind of personal difficulty. Under different names the system has been adopted by all the rest: "Personal Tutors" at Sussex and Warwick, "Moral Tutors" at York, "Advisers" at East Anglia and Essex, plain "Tutors" at Kent and Lancaster. The chief differences between them are the extent to which the moral tutor (as we may call him for clarity's sake) does double duty as an academic adviser, and the related extent to which he is responsible to an academic rather than a non-academic organ of the university. In the ones with Schools of Studies the tendency is for the moral tutor to be in the same School and to be responsible for the academic progress of the student. In Sussex and Warwick the Personal Tutors are responsible to the Dean or Head of the School, in East Anglia and Essex the Advisers to the Dean of Students, through a Senior Adviser for each School. In two of the collegiate universities, Kent and Lancaster, the Tutors are organised through the Colleges, though with the significant difference that in the former they are responsible to the Master and in the latter to the College Syndicate, consisting of all the staff, all of whom except the Professors are required to act as Tutors. In York most Moral Tutors belong to the same College as their tutees, but the system as such is organised departmentally, so that they also belong to the same subject; at the same time the student also has a Supervisor who advises him on academic matters throughout his career. There is also a difference in the numbers of moral tutors: in most New Universities almost all the staff are required or encouraged to act, but in Kent, for example, only about a third, chosen for their ability and sympathy in handling students, are selected.

By and large the system has proved itself, both in giving early warning of difficulties and reducing wastage and in fostering better staff-student relations. It is by no means universally acclaimed, however. A dilemma presents itself over the question of whether or not tutor and tutee should belong to the same Department or School: if they do not, they may have little or nothing in common, and the relationship may shrivel up; if they do, the student may feel that the admission of personal difficulties may count against him in the academic assessment of his teachers. However unjustified, both these complaints were frequently made. Perhaps they do not matter where the are plenty of other opportunities for staff-student contact: at one university a student said that there were at least eight other members of staff to whom she could turn about a personal problem. Moreover, the students who complained that they hardly ever saw their tutor seemed to be the sort of people who never needed one, and for those who did the existence of an official " uncle " or " aunt " who could mediate with the authorities or direct them to the right service — School or Department, medical officer or psychiatrist, careers adviser or bank manager — was a buffer between themselves and despair or breakdown.

Keele, which has long had an excellent tutorial system, has recognized that it is not the complete solution to the problem, especially for a minority of students who do not wish to expose their personal difficulties to their teachers. On the initiative of the retiring Vice-Chancellor, Dr. Taylor, and the head of the Appointments Service, Miss Audrey Newsome, the University has pioneered since 1964 a new kind of educational and vocational counselling service, which advises students not only on careers and job opportunities but, with the aid of a series of psychological tests, on their suitability for various educational courses, and on any academic, personal or mental health problem which the student cares to raise. The theory behind the innovation is that the student will be prepared to discuss with a sympathetic but objective professional adviser difficulties which embarrass him in a more personal relationship. The scheme has aroused a great deal of interest in other universities, and in the Department of Education and Science for its relevance to counselling in the schools, and is associated at both Keele and Reading Universities with post-graduate courses to train teachers for a similar function in the schools.

In view of what has been said above about the importance of treating university students as adults rather than children, it may well be questioned whether British students are not, in comparison with many foreign ones, overprotected and pampered. If they wish to be independent, it may be argued, why not let them stand on their own moral and emotional feet? There are many British university teachers and students who would agree with this, the former not wishing to act *in loca parentis* to grown-up men and women who neither need nor want it, the latter resenting the paternalism and moral interference which it seems to imply. We may take our stand, however, on the conception of the university as an adult community, of academic unequals and of social equals, to which we appealed above. On the one side, the academic masters owe a duty to their apprentices to teach them as best they can, and to remove as many of the difficulties, social and personal as well as educational, as possible from the path of learning. On the other side, even the most equal community of independent individuals needs some system of mutual help and support for members who are sick or in distress, and a machinery for early detection and treatment of problems and difficulties need not be paternal but merely fraternal. Viewed in this spirit of the mutually supporting fellowship of learning, the New Universities can be regarded as maintaining, and even reviving, a great educational tradition.

X

THE NEW UNIVERSITIES AND THE OUTSIDE WORLD

One of the aims of the University Grants Committee in founding the New Universities and locating them where they did was to create a mutually stimulating and fruitful relationship between each of them and the surrounding community:

> We felt strongly that a university, if it is to be fully effective, should be part of the community in which it lives; that a university has something to contribute to, as well as to receive from, the environment in which it works; and that universities should not be planned in such isolation that they run the risk of becoming closed communities with few or no outside contacts. If put in the "green fields", part of the value of a new university might be lost. We were impressed by the conviction of the various sponsoring groups that the presence of a university could act as a stimulus in so many ways to the life of the area in which it was established.*

As we have seen, the local sponsors of the New Universities certainly expected that they would bring with them material and non-material advantages for the people of the area, notably the prestige and the intellectual and cultural stimulus of an institution of higher learning in their midst, a stimulating relationship between its research activities and local industries and services, and a direct economic boost to local employment and the retail trade. These expectations belong to a long tradition of local university founding in Britain, characterized by the historian of the civic universities in the phrase "community service stations",** which neatly epitomized their reaction against a still more ancient tradition of universities as "ivory towers" of arcane learning, withdrawn from the surrounding world save for the immediate material necessities of life. In the later years of the last and the early years of this century, even those most withdrawn of ivory towers, Oxford and Cambridge, came to adopt the role of community service stations, though on a national rather than a local scale. In the 1870's Cambridge dons founded the university extension lectures in Nottingham, Sheffield and other cities, where they were to play a part in the development of new civic universities, and in 1903 and 1907 Oxford dons helped to inaugurate the Workers' Educational Association and the university tutorial classes in Lancashire and Staffordshire, which have since spread throughout the country. Together these two movements were the foundations of the close partnership in adult education which has evolved in Britain between the universities and the general public. A similar partnership has evolved between the universities and industry, and, as we saw in Chapter VII, a considerable part of the universities' research is financed by grants, gifts and endowments, and research contracts from industrial firms and research associations, while university teachers also act as consultants to a large range of Government Departments and business organisations. Lastly, because of the British system of financing the universities largely through the University Grants Committee and the Government Research Councils, the universities have developed a special and peculiar relationship to the State, and through it to the nation at large.

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* UGC, *University Development, 1957–1962*, p. 97.

** W.H.G. Armytage, *Civic Universities* (1955), Chap. xi.

The New Universities are therefore the heirs to a well-established tradition of service to the outside world and of involvement with the local and national community, and they have shown themselves very keen to uphold it. The existence of such a tradition, on the other hand, makes it difficult and unlikely for them to produce major innovations in this field. Almost anything they do in this field is practically certain to have been anticipated elsewhere.

At the local level the main interest lies in the problems of establishing good and mutually satisfying relations with communities without any previous experience of university staff and students in considerable numbers, all the more important where, as in most of the ten cases, the local communities are very small and the influx of newcomers all the more noticeable. Everywhere the local people have welcomed the university. As one Registrar put it, "The goodwill is enormous". Yet everywhere too, a sense of disappointment, if not disenchantment, swiftly replaced the first enthusiasm, at least amongst the large part of the population not directly involved with the founding and running of the university. The reason for both the enthusiasm and the disappointment was the same: the over-optimistic expectations of what a university would be and do which were raised by the local campaign to get one started. In their efforts to raise support, moral and material, for the project and to convince the UGC of their enthusiasm, the local sponsors, unwittingly and inevitably, raised hopes that a university would be the solution to all the economic and cultural problems of the area, a sort of temple of the arts, forum of intellectual discussion, source of technological co-operation, and growth point for local employment and trade. Now all these things, to a modest degree, a New University is, or is at least capable of becoming, but temples, fora, sources and growth points take time to develop, and are not the instant creations of a university Charter. When university teachers turned out to be, not intellectual knights in the shining armour of culture, but ordinary men and women with families and mortages and a shrewd eye for bargains and discounts in the shops, and when, still worse, university students turned out to be, not paragons of cleverness, good manners and impeccable behaviour, but ordinary teenagers with perhaps an extraordinary capacity and ingenuity for demonstrating their independence of conventional adult opinion and customs of conduct, the disillusionment was swift and vociferous. Letters in the local press condemned the "impertinence" of the university staff in asking for discounts in the shops, and the "immorality", "rudeness" and "ignorance" of the students in wearing "outrageous" clothes, expressing their opinions of the town and its inhabitants in forthright terms, and carrying banners some of which were (deliberately and punningly) mis-spelt in demonstrations. In some of the more socially backward areas actual physical violence by local teenagers was not unknown against students and younger members of staff who were mistaken for students. Perhaps the greatest cause of resentment amongst the smaller business and professional men was the supposed arrogance of many of the university staff in not immediately taking a (preferably suppli-cant and subordinate) place in the local hierarchy of social life, in the round of cocktail and dinner parties, in the Rotary Club, Masonic Lodge, golf and country clubs, and the like. The notions that university teachers might have something better to do with their time than spend it in socializing; that indeed academics do not divide their time between regular working hours in an office and regular disposable leisure time when they are free to indulge in "pastimes", but are quite likely to work in the evenings and at weekends and then take time off when others are working; and that scholars and scientists do not judge their success in life by the amount of money they earn or the figure they cut in the local community but by the good opinion of other scholars and scientists in other universities in the country and throughout the world; these were utterly incomprehensible to the middle-class inhabitants of small towns whose horizons were confined to their own and their neighbours' affairs. The larger business and professional men, of course, with wide horizons and often university graduates themselves, were not affected by this resentment, but then they were often involved in the university as lay members of Court or Council, or at least as frequent guests at university functions, and had direct knowledge of the aims and values of the academic profession. For the rest, however, mutual incomprehension was the result of the collision of two different ways of life and systems of values, and contributed to the general disenchantment with the university which succeeded the brief honeymoon of first establishment.

In most places honeymoon and disenchantment are now giving way to a more sober and realistic phase of town and gown relations. Expectations on both sides have adjusted themselves to the realities of life in the academic and local communities, and mutual respect and goodwill are beginning to return on a more rational basis. The University in each area is beginning to offer the regular exhibitions of pictures, books, scientific instruments and the like, the regular public lectures on a wide variety of topics, notably the series of inaugural lectures in which new professors try to explain in simple terms what they profess, and the university plays and concerts which are so important a feature of social life in university towns elsewhere. The townspeople see their University mentioned in the national press for some new development, or a don named for a Government committee, or a team of students appear on a television quiz, and feel that their town is claiming a slightly larger place in the sun. They begin to discriminate between the minority of loud-mouthed, boisterous, demonstrating students or the tiny number who get in trouble with the police, and the vast majority of well-behaved, considerate and helpful ones. They no longer automatically blame "the University" as a monolithic whole for every statement or action by an individual teacher or student of which they disapprove. They are often still suspicious that the politics and morality of most members of the University differ from their own, which may or may not be true, but is based on the untypical lack of reticence of certain university groups, but they have grown to accept the "oddity" of academics as one of the unpredictable if unfortunate facts of life, like the weather or the state of sterling. In short, they are becoming more like the inhabitants of older university towns, who have learned to take the bad side-effects of having a university in their midst along with and for the sake of the good.

Against this background of honeymoon, disenchantment and rational reappraisal, substantially true for all the New Universities except Stirling and Ulster which have not yet had time to complete the cycle, must be seen the efforts of particular New Universities to modify and improve town and gown relations. Keele had a headier honeymoon and a longer spell of disenchantment than the rest because, as the only New University of its day, expectations were higher and disappointment inevitably steeper. The citizens of the Potteries, especially those who were enthusiasts for adult education, expected a sustained and highly satisfying intellectual feast from their own university, and although Keele did eventually take over the responsibilities to the area of the Oxford Delegacy for Extra-Mural Studies and the new Department of Extra-Mural Studies (now Adult Education) did sterling work in organising extension and tutorial classes, it was not noticeably different from the old régime, and, indeed, most of the tutors were the same. Meanwhile, the University itself, completely residential on its isolated campus two bus journeys from most of the Pottery towns, earned the not entirely undeserved reputation of turning its back on the local community, especially after the death of Lord Lindsay and the appointment of a succession of Principals and Vice-Chancellors who, though admirable men with national reputations, had not his affection for and involvement with the self-educated miners and potters of North Staffordshire. Some of the university staff made no secret of their boredom with the now somewhat outworn and nostalgic educational aspirations of the locality and of their exclusive concern with building up the University College's national reputation at the expense of playing down its local roots in one of the least appealing of industrial districts. The nadir of relations between town and gown came with the second Charter in 1962 and the decision to change the name from the University College of North Staffordshire to the University of Keele. It is now hotly denied that this was a calculated severance of the umbilical cord connecting the institution with its mother community, but if this is true it merely shows how far the University had lost touch with the local people, who deeply resented what they considered a deliberate act of ingratitude. It is doubtful if relations will ever recover completely from this breach. Many inhabitants of the Potteries no longer consider it their own university, and think it has no more to do with them than, say, Manchester or Birmingham Universities, and a good deal less than Oxford, which lives in their affections as the University which came to them of its own free will bearing intellectual gifts without condescension. In the past few years, however, Keele has made valiant efforts to repair some of the damage, putting on public lectures, exhibitions, plays and concerts, and the like, and even providing a free bus service to them from Newcastle-under-Lyme. Now that for the first time a few students, about 190 of them so far, and some members of staff are beginning to live off the campus, and are to be seen drinking in the local pubs and visiting the pioneering "people's theatre", the Victoria, begun by enthusiastic actors entirely unconnected with the University, relations are improving. If in the words of one student "Keele has been an ivory tower for a very long time", it is now beginning to throw a few ropes down from the windows.

Sussex similarly has a bad conscience about its relations with the local community. "The University is not putting anything back into the region", said the Senior Tutor. Its impressive national success and superb publicity have not endeared it to the local people, who think of the Brighton College of Technology, just opposite across the Lewes Road, as much more their own, both in local control of its policy and in the local origins of its student population. Brighton, admittedly, is a difficult community to get to know and co-operate with. It is a cosmopolitan seaside resort, almost an offshoot of London in the season, with a huge, variegated, floating population of holidaymakers towards whom local feeling is ambivalent, welcoming them for the trade and prosperity they bring, while deprecating their congestion, noise and high-spirited hedonism. Into this shifting, indigestible mass the university is absorbed as a somewhat more permanent but nevertheless alien lump. At the official level, of course, between Borough Council and University authorities relations are cordial enough. It is at the unofficial level of private intercourse that contact is minimal, a large number of the leading academics preferring to avoid the bustle and noise of Brighton, to live in quiet country towns like Lewes or the surrounding villages — and it is, after all, the University of Sussex, not of Brighton. Perhaps the best hope in a situation of this kind is to foster community service at the particular and even banal level, and the University is doing what it can to liaise with local schools by providing speakers and educational advice, and has a scheme for connecting educational institutions throughout the region with its Centre for Academic Services for such purposes as common training schemes in teaching aids, curriculum development projects, the use by local teachers of the language laboratory, and the like.

Liaison at the particular rather than the general level, in the form of co-operation with local institutions for specific and limited purposes, is almost certainly more effective in the long run in fostering good relations, since here the University is offering services which quite often only it can provide, rather than expressing a somewhat windy goodwill. Extra-mural evening classes in co-operation with the Workers' Educational Association would be an excellent form of local service, but apart from Keele no New University has yet taken over general responsibility for adult education in the area, although Sussex will take over the Oxford Extra-Mural Delegacy's responsibility for the East Sussex area in 1969, and Lancaster has agreed to take over part of Liverpool Extra-Mural Department's area at a date not yet fixed. Since the whole of the United Kingdom is already divided by agreement among the universities, the Department of Education and Science and the Workers' Educational Association into spheres of influence belonging to existing university Extra-Mural Departments, a take-over bid by a New University requires both the agreement of the existing parties and the provision of finance by the UGC and the DES. The most that can be done is the co-operation of university teachers as evening class tutors, the provision of public lectures on the campus and of special short residential courses in, for example, operational research, marketing, business studies, and so on, for business men, and the like. For the same reason the New Universities have found it somewhat more difficult than the old to take over academic responsibility for the local Colleges of Education, though as we have seen in Chapter II, Keele, Sussex and Lancaster have assumed such responsibility and in some subjects are providing some of the teaching as well as general academic supervision for the B.Ed. degree. One of the most successful community services of all the New Universities is the provision of opportunities for part-time post-graduate education for local teachers, College of Education and Technical College lecturers and others, and a positive renaissance of research and higher learning is taking place in all ten areas. It is at this level that the New Universities have had the most direct, professional effect in stimulating intellectual activity in the surrounding community.

Particular New Universities have developed their own favourite schemes of community service. In York the Department of Education keeps two-way contact with local schools by requiring its staff to teach for about one day a week there (a genuine innovation in university Education Departments, which are commonly criticized for "not having chalk on their sleeves"), and by providing regular opportunities for local teachers to come to the University for special courses in their subjects, on careers advising and, in the Curriculum Development Centre, on the planning and organisation of syllabuses. York also provides facilities for specialist local interests in its Institutes of Historical Research and Advanced Architectural Studies, mentioned above, and in its Department of Music, which liaises with local musical societies, and provided a home from 1966 to 1968 for the renowned, professional Amadeus String Quartet. The Politics Department organises courses for local people, including one in local government for aldermen and councillors, and as an example of true community service the Department of Biology has been experimenting with the right kind of grass to grow on the mining spoil heaps of the West Riding of Yorkshire.

East Anglia similarly serves the community in its Food Research Institute, Fisheries Laboratory and John Innes (soils research) Institute mentioned above. Essex has the notion that Wivenhoe House might become a club to which people from outside the University could belong, and the Registrar is Chairman of the Colchester Civic Society which exists to improve the appearance and amenities of the town. At Kent the University students have taken the lead in founding the East Kent Students' Association, which co-ordinates student activities, from dances to area National Union of Students meetings, in the higher education colleges of the district. Warwick students have evolved a similar City of Coventry Confederation of Colleges, while at a more serious level there are important links with local government and industry, especially in the Engineering, Business Studies and Economics Schools, in joint research in motor vehicle engineering, control engineering, and the study of traffic problems.

Lancaster has a large number of contacts and liaisons at all levels between University and the surrounding community. The Vice-Chancellor was until recently Chairman of the Government's North West Regional

Planning Council, and helped in advising on such matters as employment policy for the region and the planning of a new city in mid-Lancashire, a few miles south of the University, as a growth point for the North West. In the same role as a regional economist he took the initiative in setting on foot "Enterprise Lancaster", a project to bring new science-based industrial enterprises into the town to replace the declining linoleum industry, offering factory space on the City's trading estate at White Lund and the use of the University's laboratory testing and other facilities. The Civic Society, a body of public-spirited townsmen and university teachers, designed like the similar one at Colchester to improve the appearance and amenities of the city, grew out of an earlier Amenity Society which was itself a classic example of the clash of interests between old town and new gown and their final resolution in amicable co-operation. The Society attracted a body of young and for the most part junior members of staff who, finding what they considered obstruction to plans for reform, publicly criticized the existing leadership of middle-aged local traders and caused a furore which eventually led to the resignation of the chairman and the reconstruction of the Society, causing much bad feeling in the process, now happily mended. Other young University teachers made their way into the Constituency Labour Party, captured the Parliamentary candidature for one of their number, and succeeded in getting him elected as M.P. at the 1966 election, thus at once annoying and elating many of the older members of the party. Members of staff have infiltrated many local clubs and societies, from the local dramatic society to the parent-teacher associations of the local schools, their wives have organised a whole series of pre-school children's play groups, and have taken the lead in women's institutes, bazaars and flower shows, and the like, while the students have initiated local charities, such as a fund for a Heart Monitoring Unit at the Infirmary, and helped to support the Wray Disaster Fund for a village torn apart by floods in 1967. Perhaps the nearest thing to an innovation in this field, unknown at least in the other New Universities, is the Town and Gown Club, a monthly buffet lunch meeting and discussion between local business and professional men and academics sponsored by the Vice-Chancellor and the Town Clerk. It has done useful constructive work -- it was at the Town and Gown Club that Enterprise Lancaster was first mooted — but it is not merely a forum for amicable discussion. Criticism in both directions is outspoken and even harsh. At a recent meeting a local business man made a swinging attack on the Springclean were first mooted — but it is not merely a forum for amicable discussion. Criticism in both directions is outspoken and even harsh. At a recent meeting a local business man made a swingeing attack on the University staff and students for allegedly describing Lancaster as "a dump", for being too interested in drinking (as manifested by the number of liquor licenses applied for by the University — a by-product, of course, of the college system), and for asking for credit and discount facilities in the local shops. Other business men present agreed, but pointed out that the University salaries and students' grants represented an inflow of £2 million into the local economy. Perhaps the most significant achievement of the Club is that it acts as a lightning conductor for otherwise explosive prejudice and resentment. There is certainly more mutual understanding between town and gown in Lancaster — which is not necessarily to say more mutual approval — than in some other university towns.

One of the fears expressed by the town side on this occasion — and a measure of the extent to which, in spite of their criticisms, they value contact with the University — was that the increasing self-sufficiency of the Bailrigg site now that shops and student residences were opening there would cut off the University from the town. Significantly, exactly the same fear is expressed by the students in a current issue of their magazine.

> If the link between the University and the City is to be maintained only by the two extremes of Charities Week and a few joint cultural activities ... the relationship is bound to be somewhat artificial. The average Lancastrian is aware of the University mainly by the actual presence of the students. When this declines, will his interest do so too? Or perhaps this is what the citizen would really like — the prestige of a University without the presence of its students.*

The last sentence expresses the mutual suspicion of town and gown which springs from lack of confidence, and the persistent question on both sides, "Do they really want us?" The comparative isolation of the campus is a problem in the relations of all the New Universities with their local communities. In small-town geography even a two-mile bus journey is a considerable barrier to communication, and makes both townspeople and students think twice about making it. As students at Kent pointed out, they can see the City of Canterbury from their Colleges, but they need to visit it only to go to the bank. At most of the other Universities banks have branches on the campus, and even that journey is unnecessary. No amount of special arrangements and social functions, from town and gown clubs to annual tea parties for landladies, can make up for the loss of ordinary, casual, spontaneous social intercouse. It may be that in the end the rationality, efficiency and communal enjoyment of the integrated pedestrian campus will be bought at too high a price, in claustrophobia and isolation from the local community.

Relations with the local community, however, are a matter of social intercourse and good neighbourliness, and whatever importance we may place on these they are no longer in today's world vital to the well-being and survival of the universities. As we have seen, university teachers have much wider horizons than most of their immediate neighbours. They no longer draw their students from the immediate locality, but from all over the country and, indeed, from overseas. They no longer depend for more than a small fraction of their financial support on local government and local philanthropists, but for the bulk of their resources on the central government and the great national industries and research establishments.** And they measure their success by their output of graduates for the national and even international intellectual rather than the local labour market, and by their research output which is evaluated and put to use not locally but by industry, government and other academics throughout the country and, indeed, throughout the world. A university which lived in perfect harmony with its neighbours but produced neither employable graduates nor useful research results would scarcely deserve the name. Conversely, one which was at strife with the local community but produced able graduates and research of national and international repute might be an uncomfortable place to work but would be amply justifying its existence. It is in its relations with the wider world of industry, government and the international community of science and scholarship that a university's reputation is made or broken, and it is therefore about these that its academic staff passionately care. Since on these too depend the university's capacity to raise money for research and expansion and to attract to its service scholars of national and international status, they are obviously right in terms of the crudest material self-interest to care. And, ironically, in the end the local community itself will gain more prestige and even material advantage from a university whose name is honoured throughout the country and whose scholars attract large research grants than from one whose only claim to fame is that it treats its landladies and shopkeepers handsomely. It is something if the Secretary of the Lancastria Co-operative Society thinks that the University is welcome if only for its members' grocery accounts. It is much more if the Director-General of the Confederation of British Industry can refer to the problems of labelling "a particular kind of analysis" and say "The University of Lancaster calls it operational research, and that is good enough for me".*

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* *Carolynne: News Magazine of Lancaster University and the North-West*, 9 May 1968.

** In 1961–62 grants from local authorities accounted for 2.1 % and donations and subscriptions for 0.8 % of university income, as against 70.5 % from Parliamentary Grants and 11.1 % from payments for research — UGC, *University Development, 1957–1962*, p. 45.

The success of the New Universities in attracting research grants and contracts from outside bodies, notably industrial concerns and research associations, has already been discussed in Chapter VII above, though chiefly in the context of the problem of maintaining university autonomy in the face of dependence on outside funds. Here it is necessary only to add a word on the extraordinarily close and fruitful relations with industry which most of the New Universities have managed to achieve in spite of their newness and small-scale operations. This is especially true of those which have developed applied sciences of particular relevance to the contemporary problems of industry, notably Sussex with its engineering sciences and now operational research, East Anglia with its food and fisheries research institutes, Warwick with motor and automatic control engineering and business studies, Kent with electronic engineering, and Lancaster with the first departments of operational research, systems engineering, marketing and now financial control. Many of these innovatory schools and departments are staffed — of necessity, since the universities themselves could not supply them — by men and women from industry. Almost all the senior academics in all three operational research units, for example, not only came from industry but had worked together at some time in the pioneering operational research division of the National Coal Board. Industrial experience enabled them to understand the outlook and problems and to speak the language of their industrial partners in research projects, and to achieve a rare rapprochement of great benefit to both sides and to their research results. In some cases, as in engineering at Warwick and applied mathematics at Lancaster, this has been reinforced by the appointment of industrial managers and research directors as part-time professors, and, as in all the schools and departments in the "business technologies", by the joint supervision by academic and industrial tutors of post-graduate students engaged in projects in industrial firms. None of this is without precedent in the older universities, but there is in the New Universities a new sense of close and intimate co-operation with industry on its central and practical organisational problems.

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* John Davies, Director-General, CBI, addressing the Conference on *Industry and the Universities* in London, 10 December 1965, *Report of Proceedings* (Association of Commonwealth Universities, 1966), p. 19.

Although both industry and higher education would be the poorer for it, it is conceivable that a university could survive and even prosper without contact with or support from industry, but it is almost inconceivable that a university could survive and prosper in Britain today without massive financial support from the State. In theory it is possible that private benefactors or, in the case of older universities, loyal alumni could donate large endowments, or that students, as Professors Charles Carter and Bruce Williams suggested to the Robbins Committee, could be charged the full cost of their university education and recover it in most instances from the State, thus freeing the universities from direct dependence on it. In practice, however, the first is highly unlikely and the second politically impossible. For the foreseeable future the universities will continue to depend for more than 70% of their recurrent income and more than 90% of their capital investment on Parliamentary Grants. In addition, a large part of their research income is provided by the Government Research Councils, for Science, Medicine, Social Science, Agriculture, and so on, and by research grants and contracts from Government Departments such as the Ministry of Technology, the Ministry of Agriculture and Fisheries, and the Department of Education and Science itself, which finances a great many projects of educational research, while much of the post-graduate teaching and research would be impossible without the studentships and fellowships awarded by the DES and the Research Councils. From the universities' viewpoint the largest segment of the horizon of the outside world is filled by the State.

It is not surprising, therefore, that a large part of the energy and efforts of university administrators and senior academics is spent in corresponding with, telephoning, and sitting on committees of various organs of the State. One of the consequences of dependence and of the limited funds earmarked by Parliament is that much of this energy and effort is directed to competing against other universities for a larger share of the fixed resources. The quinquennial submission of each university to the UGC becomes a piece of special pleading designed to persuade them to raise the block grant at the expense of its competitors. Universities know that a reputation for speedy and efficient planning may earn them a bonus in the form of additional building grants from unspent annual balances if they can show that they can spend them on useful projects within a limited time. At the departmental level applications for grants from the Research Councils are shamelessly competitive, as is the annual scramble for a quota of studentships which the department may offer to its post-graduate applicants. Under the British system academics themselves play a large part in the allocation of Government finance, and constitute a majority of the University Grants Committee, and of the Research Councils and their subject sub-committees. This leads to further competition between universities, to get their representatives on to such committees, and to attract men who are already on them or are so eminent that they are likely to be put on them. Failure to get representation on, say, a subject sub-committee of a Research Council may, it is felt rightly or wrongly, lead to neglect of applications for grants and studentships in that subject. This can become a vicious circle: small grants and few studentships mean small results, few post-graduate degrees and a low reputation, which in turn attract small grants and few studentships. It speaks well for the New Universities that they have been able to attract in their early years a full share of research grants and post-graduate students, as we saw in Chapter VII, especially Table 8. This has not been achieved without sharp competition and recrimination. Two of the New Universities, for example, are said to be amongst three institutions which have taken the lion's share of the grants and studentships from one Research Council, to the chagrin, it need hardly be said, of the academics in that subject at other New Universities. At this level of State patronage relations with the outside world become a continuous competition if not for survival at least for *lebensraum* and expansion.

Finally, universities are part of the international world of science and scholarship, and measure their prestige and status by what men in universities in other countries and other continents think of them. A truly great physicist, biologist, sociologist or historian is one whose work cannot be ignored by anyone practising in his field anywhere in the world. There are as yet no Nobel prizewinners in the New Universities, but there are men and women whose work is known and whose books and articles are read in all the six continents. They would have been so, no doubt, if there had been no New Universities in Great Britain, but the fact that the New Universities have been able to attract academics of this calibre is sufficient evidence of their as yet small but honoured place in the international world of learning.

XI

PLANNING AND FINANCE

In the British system of organising universities it is impossible to separate the evalution and planning of their work and expansion from the question of cost and finance. Since the bulk of their money – over 70 % of their annual expenditure and over 90 % of their capital investment – comes from the central Government, and at the beginning of each quinquennium is fixed for five years ahead, all planning by individual universities is done within a known framework of available resources. The main decisions which have to be made by each university are how to allocate these known resources among its various activities, existing and potential, and how to ensure that it uses them in the most efficient, economical and productive way.

The recurrent grant allocated by the University Grants Committee to the New Universities (except Ulster, which is financed directly by the Northern Ireland Government) for each year of the current quinquennium is shown in Table 13. Since Exchequer Grants make up on average about

Table 13. **EXCHEQUER RECURRENT GRANT, 1967–72**

£ million

	1967-68	1968-69	1969-70	1970-71	1971-72
East Anglia	1.11	1.25	1.38	1.52	1.67
Essex	0.79	0.86	0.94	1.02	1.10
Keele	1.00	1.06	1.11	1.17	1.23
Kent	0.95	1.05	1.13	1.23	1.32
Lancaster	1.00	1.16	1.29	1.43	1.58
Sussex	1.96	1.98	2.09	2.21	2.33
Stirling	0.34	0.51	0.64	0.80	0.95
Warwick	1.02	1.14	1.23	1.34	1.45
York	1.13	1.10	1.19	1.29	1.40

Source: University Grants Committee, *Annual Survey, 1966-67* (HMSO, Cmnd. 3510, 1968), p. 24.

72% of the income of British Universities, to these amounts should be added about a third for income from student's fees (about 8% of total income), payments for research by Government Departments and other bodies (about 12%), income from endowments and donations (about two and a half per cent — perhaps less for the former in the case of the New Universities), and grants from Local Authorities (about one and a half per cent — perhaps more in the early stage for the New Universities).*

Thus the New Universities know within very narrow limits how much money they will have to spend on recurrent expenditure during the present and the next three years, and can plan their activities accordingly. Although non-recurrent grants for buildings, furniture, major items of equipment, and associated costs such as professional fees, are allocated on a different basis, with periodical announcements of grants for specific projects and of the aggregate amounts allocated for building starts in each year, they also know fairly precisely how much money they will have for capital purposes for several years ahead. Indeed, the UGC has indicated that to achieve the "minimum viable size" of 3,000 students each New University will require a capital stock (exclusive of appeal funds for residence and the like) of some £6.5 million of buildings and equipment, with the implication that funds to this amount will be forthcoming. Provided that they operate within the now very tight controls of cost and design exercised by the University Grants Committee, they can rest assured that their physical development plans can be carried out.

While the available funds for recurrent and capital expenditure, once fixed, set ultimate limits to what can be done, the figures are not so arbitrary or beyond the university's influence as they might at first sight appear. It is true that the total grants made to the universities as a whole are fixed by the Exchequer in negotiation with the Department of Education and Science, but this is done after receiving the advice of the University Grants Committee, based on its quinquennial visitation to each university, on a detailed submission from each of them on its needs and plans for the ensuing five years, and on consultations concerning specific projects and developments. In this process the individual university is able to put forward reasoned proposals aimed both at enlarging the aggregate grant for university education and at increasing its own share of the total allocation. Planning as far as the individual university is concerned is therefore a matter of making persuasive proposals for specific developments and of bringing them together in a quinquennial submission which will convince the UGC that plans are worth while, well founded, and will be carried out efficiently and economically.

How are the figures, of funds required for recurrent and capital expenditure, arrived at? Universities, as we saw in Chapter VII, produce two kinds of "output", educated students and research, to which we might, in view of the last chapter, add a third, service of other kinds to the community. Unfortunately, the second and third are impossible to quantify, and can be considered only as an unmeasurable bonus added to the first. Even the first, "completed students", is a difficult enough product to measure, because of the possible variations in quality. Nevertheless, since for planning rather than productivity purposes it is not completed students, but students in process of being educated, which is the important factor, and a bad student costs as much (perhaps more) to educate as a good one, we can ignore differences in quality and plan simply on the basis of students to be accommodated. Once this is accepted, everything in university planning under the British system turns on the student numbers which a university plans to admit.* This will determine, first, the number of academic staff: most universities prepare their quinquennial submissions on the basis of a fixed staff-student ratio, usually of about 1 : 8, including of course research staff, which might mean an effective ratio in the main teaching departments of 1 : 10 or even more. The number of academic staff will in turn determine the number of administrative and ancillary technical, clerical and service staff: senior administrative staff must obviously bear some numerical relation to academic staff, while it is common for ratios to be laid down for clerks and secretaries (e.g. 1 : 5 academic staff), and technicians (e.g. 1.25 : 1 academic staff in science departments); and catering and other service staff are directly related to the numbers of students and all categories of staff to be catered for. Since staff salaries, wages, superannuation and insurance account for about three-quarters of recurrent expenditure, these two items — academic and other staff — are the most substantial elements in the planning estimates. The remaining quarter of the recurrent expenditure can be divided between three categories of items, all closely related to staff and student numbers: materials and stores, including laboratory supplies, library books and materials, printing and stationery, and similar academic expenditures, which account for perhaps 15%; services, including telephones, postage, advertising, fuel, electricity and gas, water, professional (accountants', solicitors' and similar) fees, staff travelling and subsistence, which account for perhaps 8%; and renewal, repairs, decoration, etc., of buildings and equipment, which perhaps account for the remaining 2%.

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* National averages from UGC, *Returns... 1964–65*, Table 11.

In the same way, capital investment in buildings and equipment is mostly related to student numbers either directly, or indirectly through the numbers of academic and other staff. The only exceptions to this are specially expensive items of research equipment, such as linear accelerators or radio-telescopes, but apart from computers the New Universities have not yet acquired many such items. For the rest, building expenditure is directly related to planned numbers through two formulae imposed by the UGC: an allowance of superficial area (so many square feet) per occupant of different kinds and for different sorts of building; and a maximum expenditure per square foot for different sorts of building. Thus for individual offices and tutorial rooms the formula allows 200 square feet for each professor and 150 square feet for each other member of staff, but these are averages and actual rooms are not necessarily of this size. Administrative office blocks are estimated at 100 square feet per administrative officer and 75 square feet for secretarial staff, though senior members of the administration are accommodated on the same scale as professors and other senior academics. The formula for lecture theatres allows 10 square feet and for seminar rooms 20 square feet per student place, but there is as yet no formula for determining how many student places there should be for a given total of students. (A study of the use of accommodation is being made by Mr. K.S. Davies, Research Officer to the Committee of Vice-Chancellors and Principals, which might result in such a formula.) The formulae for science laboratories (including fume cupboards but excluding balance rooms and store and preparation rooms) are as follows:

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* "Under the British system" since, in a different system in which, say, fees play a larger part in university finance, variations in fees can be used to vary the student numbers.

Elementary or intermediate	40 square feet per work place
First and second-year honours and intermediate	45 square feet per work place
Final year honours	60 square feet per work place
Research students in groups of four or more	60 square feet per work place
Advanced or individual research	120 square feet per work place

In addition 15% of space is allowed for store and preparation rooms, and 20% for other teaching and ancillary research space, including workshops, cold stores, furnace rooms, and the like. Again, no general formula is laid down for the number of work places to be provided for a given number of students, but each departmental building or section of one is assessed on its needs and merits. For social and recreational space and for dining and catering facilities no precise formulae are laid down, but 10 square feet per person is a widely accepted norm for the first and 12 to 20 square feet per dining place for the second. Residential accommodation is based on a formula called the " Residential Costing Unit ", which is in effect a normal single study-bedroom of 120 square feet, plus 25 square feet for associated toilet, storage and other facilities; all other usable rooms, such as married accommodation, flats for wardens and other staff, common rooms, dining and catering areas, stores, and so on, are estimated in multiples or fractions of R.C.U.s. In addition to these allowances of usable space a percentage of space is allowed for " balance areas ", including circulation space (entrance foyers, corridors, crush halls, staircases, etc.), and for other necessary service rooms (cloakrooms, toilets, cleaning and boiler rooms, etc.), which ranges from 40% for libraries to 55% for administration and arts teaching buildings and 60% for science buildings. These are notional rather than actual additional allowances, and if a university can design its buildings with a smaller percentage of circulation space it can spend the amount saved on a better design or a higher standard of finish.

The final control on capital investment is the limit which the UGC imposes on the cost per squatre foot of each type of building (together with associated limits on the cost of furnishing and equipping new buildings). Currently the basic limit for ordinary teaching buildings (exclusive of site works and abnormal services) is £5. 7. 6 per square foot, although the figure is subject to continuous revision (for buildings not yet started) to allow for the continual increase in building costs. The limit applies to any building carried out even partly with UGC money: a university is not allowed to improve or embellish a building from non-public funds. The basic cost per square foot is allowed against the gross area, including circulation space and other balance areas, and the amount is increased for abnormal costs, such as special foundations, heavy load-bearing floors for machinery, special services as in science laboratories, and the like. Thus a typical administrative block or arts teaching building might be approved at £5.10.0 per square foot. Residential buildings are costed in Residential Costing Units, currently at £985 per RCU (for a single study-bedroom and associated toilet facilities), plus £150 per R.C.U. for furniture. Together with the associated accommodation for residential staff, common rooms, dining rooms, kitchens, etc., this may mean an average cost of up to £1,450 per student place (or up to £1,850 including site, professional fees and equipment.)* In addition to all these allowed costs for different types of building there will also be the cost of site purchase (not relevant in the case of the New Universities, which have acquired their sites, or the purchase money for them, *gratis*), the professional fees of the architects, structural engineers and quantity surveyors, allowable at up to twelve and a half per cent of building costs, and of furniture and equipment, allowable at 15%.

In spite of these controls, both physical and financial, there are still elements of uncertainty or of flexibility, according to the point of view, in university planning. Since science and still more technology cost so much more than arts and social studies – the recurrent cost per student, which averaged £660 per annum in 1961–62, varied from £360 in arts to £760 in pure and applied science and to £1,310 in medicine and veterinary science** – the "student mix", or distribution of students between subjects, makes an enormous difference to aggregate costs. Again, the proportion of post-graduate to under-graduate students and the amount of effort devoted to research, especially in "expensive" subjects, makes for considerable variations in cost. Finally, the proportion of students in residential accommodation is a variable which, at up to £1,850 per place, makes a large impact on capital investment. Nevertheless, it is true to say that the New Universities took their most important planning decision in each case when they fixed on, and persuaded the UGC to accept, their target figure of student numbers. From this figure inevitably flows all the other major quantitative planning decisions: number of staff, academic, administrative and ancillary; amount and cost of teaching, research, office and social accommodation; and also, since the UGC is not likely to favour residential provision for less than a third or more than half of the students (apart from Keele), the amount and cost of the residential accommodation. Even the "student mix" is coming under increasing control: in addition to "encouraging" the New Universities to concentrate in the early stages on arts, social studies and pure science and in effect forbidding them to develop the expensive biological technologies of medicine, dentistry, veterinary science, and agriculture and forestry, the UGC in their recent allocation of grants for the quinquennium 1967-72 have cut back the "advised" or "expected" student numbers in science-based subjects and the estimates of post-graduate research students in nearly all subjects. Although each university is still free to exceed the "advised" or "expected" quotas, "if by internal economies, increased 'productivity' or any other means it thinks it can rightly do so," it is made abundantly clear that the UGC will not provide the money to support such supererogatory expansion. In brief, the New Universities, like the rest, are free to plan their own development, but within the financial parameters determined by the UGC.

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* UGC, *University Development, 1957–62*, p. 88.

** *Ibid.*, p. 64.

Whether there is any room left for innovation by individual universities in the fields of planning and finance may well by this point be doubted by the reader. Yet, surprisingly, there is no consensus of opinion amongst universities on how planning should be organised, new developments initiated, quinquennial estimates prepared for the UGC, annual budgets framed for self-examination and control of income and expenditure, and least of all how the efficiency and productivity of their activities can be evaluated. It is true that Vice-Chancellors, Registrars, Bursars or Finance Officers, and Building Officers, all meet their colleagues frequently and pick up tips from each other, notably on how to deal with the UGC. It is also true that the Committee of Vice-Chancellors and Principals is beginning through a special Sub-Committee to study the organisation and methods of their administrative procedures, with two pilot units based in Edinburgh and York Universities respectively, and, through its Building Sub-Committee, to tackle the problems of car-parking, telephone systems, privately financed student residence (the Lancaster scheme) and, in two Working Parties set up by the Sub-Committee, of industrialized building and maintenance requirements. The Building Sub-Committee also maintains an Information Service, which keeps University Building Officers in touch with the cost, type, period of erection, and method of construction of every new university building, and with relevant information from the trade journals, the Government's Building Centre, and the Royal Institutes of British Architects and of Chartered Surveyors. But all these pilot studies and information-swapping do not yet amount to co-ordination, least of all in the vital spheres of evaluation and planning by individual universities. The New Universities had no firm tradition to follow in the preparation of their plans for expansion.

This can best be seen by contrasting the two opposite methods of preparing the quinquennial submission in use in the New, as in the older, Universities. Both are equally based on more or less known aggregate figures of student numbers, but whereas in East Anglia, for example, the initiative for new developments is decentralized, and arises from the Estimates Committees appointed by the Schools, in Sussex it is centralized, and is concentrated in the Planning Committee. In the result, it may be argued, the two methods come to much the same thing. East Anglia like every other university, has a central co-ordinating committee for this purpose, called in their case the Development Committee, which receives, assesses and determines the relative priority of the different projects, while the Sussex Planning Committee, like those elsewhere, is meant to represent the different interests within the University and invites suggestions and recommendations from them. Nevertheless, a difference of substance remains between the two systems, that of East Anglia perpetuating the commoner university tradition, natural and appropriate to established and slow-growing institutions, of waiting for innovations to arise amongst those most likely to generate them spontaneously, Sussex adopting the newer technique, more relevant to the early stages of planning a new institution *ab novo*, of concentrating and, as it were, professionalizing the process of expansion and innovation. The former method, while allowing the maximum scope for individual inventiveness, is the less innovatory from an institutional point of view, and stands in danger of lacking drive and executive efficiency. The latter, while risking the loss of individual spontaneity, offers the better hope of institutional innovation and of "structuring for growth".

And so, indeed, it proves in practice. Sussex has probably thought more systematically about planning and budgetary estimating than any other university, New or old. Why this should be is not clear, since every other New, or rapidly expanding old, University has the same need and opportunity. The most obvious explanation, perhaps, is that it appointed a Deputy Registrar, Mr. Geoffrey Lockwood, now called the Planning Officer, with a flair for planning and, unusually in a New University, was able to make time to think about it and persuade others to take it seriously. At all events, it is his memoranda and methods of business which have become the basis of the Sussex system. His *forte* is what he calls logistical planning, an etymologically appropriate concept since it stems from the movement and quartering of troops, and as applied to a university is a system of costing future developments based on projections of staffing ratios and ultimately on predicted student numbers. It is in effect a frank recognition and systematic application of the fact which we have already noted, that almost all university costs, whether capital or recurrent, can be calculated by known ratios and costing allowances from the number of students to be provided for. Take for example the number and annual cost of the professoriate, which at first sight would seem to be purely arbitrary: in fact the number of professors is predetermined within very narrow limits by the UGC's maximum percentage of senior posts (professor, reader, senior lecturer) to total academic staff of 35%, of which professors are expected to comprise about a third. Since academic staff can be estimated at approximatively 1 : 8 students, professors can be estimated at approximately 1 : 70 students. Their annual cost can be calculated as the projected number of professors multiplied by the average professorial salary (currently, £4,410) plus 10% for the university's contribution to superannuation and about £70 per professor for the university's share of social security payments. The number and cost of the other levels of academic staff can be estimated in a similar but slightly more complicated way, since information or assumptions will be needed about their ages and lengths of service in each grade and the rates of appointment and promotion to and between grades. The numbers and cost of research fellows and assistants, administrative, technical, clerical and service staff can be similarly calculated, so that a fairly precise estimate of costs comprising some three-quarters of the total recurrent expenditure of the university in any particular year can be derived more or less directly from the projection of student numbers. In theory the other quarter — materials and stores, services, and renewals and repairs, as noted above — can also be precisely calculated, as fixed percentages of the salaries and wages bill. In practice, Sussex has not yet found ways of incorporating certain " overheads ", such as the Appointments Service, Accommodation Office, Health Service, and even floor cleaning, into the logistic projection. For these, as for the buildings, furniture and equipment on capital account, separate calculations have to be made, based in the latter case on the UGC formulae for usable area and cost per square foot delineated above.

There is nevertheless a large element of uncertainty in the technique, arising from the basic question of which should be the starting point: desirable student numbers or actual resources available. Should the university first decide how many students it wants to take and then calculate the cost of taking them, or should it estimate how much cash it is likely to obtain and calculate how many students this will support? In the expansionist atmosphere in which the New Universities were founded the need to increase student numbers naturally came first, and decided the question in the first way. But now that the rate of expansion is slowing down and national resources devoted to higher education are being squeezed, a mixture of the two methods has to be applied: the quinquennial submission is in effect a bid based on desirable student numbers, which is then translated into a (reduced) grant by the UGC, which then has to be re-translated into a logistic projection of the student numbers it will support. Foreknowledge that this will occur has its effect on the preparation of the quinquennial submission, which to be realistic must take account of the probable grant which will be made available. The advantage of the logistic method is that it enables adjustments to be made very simply and swiftly both ways between numbers and finance, and at the same time clarifies the interdependence of all elements in the system.

The logistic projections in Sussex are calculated by one person, the Planning Officer. In October of each year he initiates the annual planning cycle by producing revised versions of the five elements of the planning process: (*1*) strategic plans, concerning major objectives and decisions, including the long-term rate of growth, the balance between arts and science, and between under-graduate teaching, post-graduate training and research; (*2*) operational plans over the following one to three years, including the numbers of staff and students, curriculum changes, reallocation of space, etc.; (*3*) annual budgets, translating the operational plans for each spending area and unit into financial and/or numerical terms for the following year; (*4*) control reports, showing actual performance over/against past budgets, manpower plans, admissions targets, etc.; and (*5*) documents on the running of the system, such as the Guidebook of Regulations, descriptions of the budgetary system and of the University records and statistics systems, and reports on internal and external trends and factors, from educational technology to national social policy. For the last purpose, of collecting and disseminating information, an Institutional Research Team is being attached to the Planning Officer, and the University's records are being computerized, in order to build up an integrated management information service. The revised plans, budgets and documents, after being checked by the Vice-Chancellor and the Planning Committee, are then fed into the lowest of the four planning levels of the University: the sub-units (e.g. Subject Groups of Schools, the Admissions Office, etc.); the units (e.g. Schools of Studies); the main planning areas (Arts and Social Studies, Sciences, Social and General); and the University itself (Council, Senate, Planning Committee and Vice-Chancellor). Discussions take place at each level, on a timetable by which they reach the top level by March for approval by Senate and Council. After that they are again sent back down the system for adjustments at each level, before coming back for final approval at the top. The quinquennial planning cycle is derived similarly from the annual cycle, and the quinquennial estimate for the UGC is in effect the University's strategic plans converted into a single five-year plan. The existence of the overall logistic projection provides parameters within which the various planning officials and committees can operate, and also a framework into which the Planning Committee can fit their plans and against which it can test them.

As the Planning Officer at Sussex is consciously aware, the system has its limitations. It is basically a system of planned growth which has great

215

advantages during a system of rapid expansion, but becomes less useful and relevant as growth slows down or stops and the logistic uncertainty disappears. Since the logistics are calculated in real terms (chiefly of manpower) there are uncertainties in translating them into financial ones: for example, academic starting salaries, additional increments, promotions, and so on, may differ from expectations. For the same reason there is little incentive to economy within the logistic limits: for example, an appointing committee may choose to appoint a lecturer at the top of the scale at a cost of £2,500 per annum instead of an assistant lecturer at £1,105. Again, planning ratios tend to become norms for all subjects whether they are appropriate or not, with consequent overstaffing and waste: for example, biology might claim as many technicians per staff member as chemistry, though its needs might be little more than half the ratio. Because the major planning decisions are taken centrally, very little power or discretion is left to individuals or Schools, so that a choice between, say, the spending of additional resources on more staff and on more equipment cannot be made by those best qualified to make it. Finally, since it does not in practice apply to all items of university expenditure, there is a strong incentive to look to the non-logistic funds as a source which can be " raided " to meet contingencies, with consequent overspending in these areas.

The most obvious alternative to logistic planning, however, a system of unco-ordinated bids by the decentralized Schools or Departments, is so obviously inefficient in an expanding situation and subject to the in-fighting of power politics in any situation that no New University would adopt it in a simple, unmodified form. Decentralization on the East Anglian pattern is the real alternative in practice, and may be called a system of co-ordinated bids, in this case by the Estimates Committees of the Schools, (on the basis of a " cockshy programme " by the Development Committee), which are then assessed, adjusted and placed in order of priority by the Development Committee, which passes them on, with comments and recommendations at each stage, via the Senate and the Finance Committee to the Council, which is finally responsible for the quinquennial submission to the UGC. On receiving the UGC's allocations of grants the Council, after deducting a certain percentage for unforeseen developments and contingencies, allocates the remainder to the various " Spending Authorities ", who are the Deans of each School and the chief officers appointed for all other sections, projects and schemes, and who have within the very wide limits of overall control by the Council complete discretion in the spending of their funds. In other words, power over expenditure returns to the same bodies which did the planning, except that executive control is by an individual responsible to the School or other division (or to the Vice-Chancellor) rather than by a committee of the same body. The advantages of decentralization are obviously the spontaneity, flexibility and incentive to economy which arise from allowing those most responsible to control their own expenditure. The disadvantages are equally obviously the vested interests which tend to concentrate developments along existing lines to the exclusion of new ones unconnected with any School or section, and the inability to deal swiftly and effectively with unforeseen opportunities for new developments offered by " windfall " increases in resources, which have to be fought over afresh by all the interested parties. In practice, however, a skilful Vice-Chancellor will ensure that the necessary balancing act is performed with the minimum of friction, waste of time, and inefficiency. A good Vice-Chancellor, in fact, will be his own logistic planner, and "do his own sums", so that he is continuously aware, for example, of the staffing ratios and needs of each School or Department. In this way he in effect performs the work of a Planning Officer and co-ordinates what might otherwise become a rather incoherent system. In practice, therefore, the two systems of planning come much closer together than their opposite philosophies might lead one to expect.

All the New Universities lean in their planning methods towards either the Sussex or the East Anglian model, usually according to the outlook of the founding fathers and the personality of the first Vice-Chancellor. Thus Keele, for example, following the Balliol "society of scholars" tradition of Lord Lindsay, is nearer to the East Anglian end of the spectrum, while Lancaster, with an economic planner at its head, is nearer to the Sussex end, and makes major decisions through a central, representative Development Committee, with logistic projections of student numbers, departmental staff, student ratios, and sophisticated cost-benefit analyses at its elbow. The latter Committee, for example, was able to report to the Senate after analysing the UGC's recent quinquennial allocations that because of an already committed capital investment in buildings which by 1971-72 would be capable of accommodating 3,000 students, the UGC's recommended total of 2,345 for that year must be regarded as a minimum; that since running costs would therefore be high, at £767 per student instead of an optimum £750, and unduly insensitive to student numbers, it would be politic to raise the target to 2,500, which would reduce the cost per head and make fuller use of the available accommodation. In the same report a "weighted" staff-student ratio (using the UGC's weights of 2 for post-graduates in arts and social studies and 3 for those in the sciences) of 1 : 12 was applied to project staff numbers over the five years and to allocate additional appointments between departments. Departmental grants were assumed to rise in proportion to staff numbers, while expenditures on administration, library, computer, maintenance of buildings, and student services (careers advice, catering deficits and subsidies, accommodation office, and health service) were estimated at fixed percentages of total expenditure or, in certain cases such as careers advice, pegged at existing levels. In brief, this was an example of what might be called *ad hoc* logistic planning, at least as sophisticated as the Sussex method.

All the foregoing relates to *quantitative* planning and finance, based ultimately on projected student numbers. Evaluation, as far as this is concerned, is merely a matter of checking how nearly a university's targets have been achieved and whether unit costs, especially recurrent and capital costs per student, have been as estimated. As we saw in Chapter I, especially Tables 1 and 2, the New Universities so far have all exceeded their original targets of student numbers. During the present quinquennium, because of the deceleration in the national demographic rate of growth and the state of the national economy, some of them may fall below their original aim of 3,000 students within their first decade of opening, though not necessarily below their adjusted quinquennial targets. The largest source of uncertainty on this side is the current swing in the school population away from science and towards arts and social studies, which may make it even harder to fill places in university science departments. This, however, has already been allowed for to some extent in the reduced numbers in science recommended by the UGC. A problem of an opposite kind might arise if, because of the Dainton Report or mere reaction in the schools to a shortage of scientists, there should be a swing back towards science, and this might be more difficult to deal with, since additional science students are more difficult and costly to accommodate than additional arts students. Even here, however, the New Universities may be well placed, since the cut back in science numbers has come too late in many of them to alter science building programmes, and spare laboratory accommodation will be more ample than in older universities.

As for cost per student, the only measuring rod which can be applied is the national average, and because of wide differences in "student mix" this is a very rough comparison indeed. In fact, capital cost per student is practically impossible to distinguish, since so much of the current building in the New Universities is related to future numbers and "mixes" which are constantly changing. An estimate of the capital cost of providing a University for 3,150 students at Lancaster, assuming that half the effort is in science and technology, and about half the students are in residence, averages £2,800 per student; for 7,000 students, in the second phase of the development plan, it averages £2,650 per head.* This compares well with the UGC's estimates of average costs of providing places (excluding residence) of £1,800 in arts and social studies, £4,000 in pure science and £5,200 in applied science.** It goes far towards confirming Lord Fulton's claim that, mainly because of the cheapness of the sites, the New Universities are cheaper to build than an equivalent expansion of the older universities. Apart from the cost of land, the UGC formulae ensure that building costs and standards in the New Universities are kept closely in line with those elsewhere. One innovation of an economizing kind, however, is worth mentioning again: the "Lancaster scheme" of privately financed student residences, built with thirty-year mortgages from banks and insurance companies repaid out of the rents, has been made possible by leaving out common rooms, dining rooms, and other expensive communal facilities, and by a system of construction based on private housing standards which has brought the cost down from a minimum of £1,450 in halls of residence to £725 per student place. This dramatic saving has attracted a special study by the Building Sub-Committee of the Committee of Vice-Chancellors and Principals, and aroused the interest of universities everywhere.

Recurrent cost per student is easy enough to calculate but not much more meaningful to apply. In 1964-65, the last year for which full figures are available, the average annual cost per student in the New Universities was £938 as against a national average of £894. About this comparison two observations need to be made. On the one side the national average included the very expensive subjects, medicine, veterinary science, agriculture, and some kinds of technology, not studied in the New Universities. On the other, the running costs of the New Universities were bound to be much higher than average in the early stages, when large central administrations, expensive central facilities, and top-heavy academic staffs were required for work which was directed more to future than to current student numbers. Since then, a rough estimate, based on the Exchequer Grants for 1967-68 inflated by a third to allow for other sources of income, suggests that the annual cost per student has declined to £859, well below the national average, and it is probably still declining.

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* C.F. Carter, *Third Annual Report of the Vice-Chancellor of the University of Lancaster* (1967) pp. 18–19.

** Information from Mr. R.C. Griffiths, Deputy Secretary of the UGC, 18th January 1968.

Alongside this quantitative approach, it is possible to take a *qualitative* approach to evaluation and planning. If the quantitative norms, in terms of student numbers, staffing ratios, salary scales, building formalae, costs per square foot, capital and recurrent costs per student, and so on, are fixed outside the university, it is still possible to evaluate and plan inside the university in terms of quality of output. The output of a university, as we saw in Chapter VII, consists of educated students and research, to which we may add, in view of the last section on the Outside World, service to the community. Now it is true that the last two products are incapable of accurate measurement, and are therefore not amenable to notions of productivity. Research and community service must from this point of view be regarded as a sort of "negative overhead", bonuses as unpredictable as they are unmeasurable. Productivity studies in universities must therefore concentrate on improving the quality, as well as reducing the cost, of the "completed students". This does not necessarily or even primarily mean producing more first-class honours degrees or raising the classes attained by the majority. Indeed, a university which did this to any substantial extent would raise suspicions about its academic standards or find itself in trouble with its external examiners. Much more relevant and important is it to reduce "wastage" rates to the minimum, thus reducing both the sense of personal failure and the economic cost per successful student; to ensure that students choose the right subjects and courses for them, so that they can use their talents and inclinations to the best advantage; to help them to choose careers which fit their personalities and fully employ their intelligence and skills; and not least, so to educate rather than merely instruct them that they become happy, useful and creative members of the wider community in which they will have to live and work.

University education, like all traditional forms of apprenticeship, has always had wider objectives than the mere transmission of information and particular skills, and has always included these wider aims; but as long as universities were small societies with homogeneous memberships they could leave these aims, as in traditional apprenticeships, to the informal education of living together. Now that universities are much larger institutions recruited from a much more varied social background the informal methods of the past are no longer sufficient, and formal means have to be created and consciously applied. Qualitative planning and evaluation are still in their infancy, but the New Universities, with their need and opportunity to create an efficient system of education, an integrated community and a meaningful set of objectives in a brief space of time, have been more strongly motivated than some others to evaluate their methods and aims and to plan them more systematically. Something of this we have already seen in their choice of physical development schemes adapted to the creation of an integrated community, in their internal organisation in colleges or schools so as to facilitate contact between junior and senior members, in their adaptations of the moral tutorial system, and, in four of them, in the conscious intention to examine and evaluate their own performance implicit in the establishment of units or departments of higher educational research.

Perhaps the most promising line of advance for the future lies in the sociological and psychological, especially the aptitude and personality tests, being applied to whole intakes of students by the last-mentioned educational researchers. In Sussex the Fellow in Socio-Educational Research puts a "sociological questionnaire" to all first-year students on entry, which covers every aspect of social background from father's occupation to religious belief and also collects information on choice of academic subject, career intentions, moral and political beliefs, and basic psychological attitudes and traits (based on the Eysenck personality and Hudson "creativity" tests). In Lancaster a pilot scheme of aptitude tests, using the Miller-Rothwell battery and the Cattell 16PF personality test, was begun in 1966. A battery of nine different tests has been applied to all entrants in Essex, and similar tests to selected students by the Appointments and Counselling Service at Keele. Only in the last case, however, have they been used as a basis for careers advice and counselling, and in the other three centres they are purely for educational research and record purposes. It is still too early to say whether the invaluable information collected on the students can be put to practical use in planning courses and advising on choice of subjects and careers. If it should turn out that it can, this may well be one of the most valuable innovations made in the New Universities.

The higher education research teams could be an invaluable instrument of evaluation and planning in other directions, too, and to some extent they have been. The elaborate student questionnaires at Sussex and Essex have laid the foundations for these two universities to build up a common student record system with the Universities of Belfast and Southampton, "a significant innovation" according to the Senior Assistant Registrar in charge of records at Sussex, and an important element in their logistical planning. Miss Marie Clossick's work on student residence at Essex has thrown up important implications for policy, such as the need for more residential towers of the same kind, the role as a safety valve for discontent of a flexible system of exchanges, the need in view of the number of meals taken privately for rather less refectory accommodation than was originally planned, and so on.*

Mr. W.T. Koc, the Research Fellow in Teaching Methods at Lancaster, was brought in from the foundation of the University to give advice on the size and equipment of teaching rooms, and conducted a survey in the middle of the first year of its existence on the workloads experienced by students in different subjects, and which led to some equalizing of them. Mr. A.H. Iliffe's study of the Foundation Year at Keele has had some effect on its subsequent development, and especially on methods of assessment. Nevertheless, as noted in Chapter VIII, all these research teams, with the exception of the socio-educational one at Sussex which comes into a different category, have been wound up as separate entities, and in so far as their work has continued within other divisions of the university it has for the most part been directed increasingly towards other universities and higher educational institutions rather than their own.* Perhaps the propinquity of pedagogic experts continuously observing his teaching methods and success is more than the average academic can bear. At best it implies additional thought and preparation taken from other concerns, notably research, while at worst it can mean severe disturbance of accepted attitudes and patterns of work and an unforgivable blow to self-esteem. Hence the deep suspicion in which the educational researcher is held, and the diversion of his energies from dangerous internal to safely external research. This is a sad comment on what for many was one of the most significant innovations attempted by the New Universities. It goes far towards proving the old adage that universities are prepared to research into everything except themselves, and finds them guilty of rejecting the only strictly professional instrument by which they can evaluate their own activities so as to plan them more effectively.

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* Cf. Marie Clossick, ***Student Residence: a New Approach at the University of Essex*** (Society for Research into Higher Education, 1967), pp. 52–5.

Distinct from the work of the educational researchers there is also the contribution of the educational technologists, notably in the high activity centres designated by the UGC at Essex and York (for language teaching) and at Sussex (for " multi-media "), discussed above in Chapter VIII. Up to now this has been principally concerned with improving the quality of the instruction rather than with increasing student numbers, and so with qualitative rather than quantitative evaluation and planning. It is still in its early stages of development, however, and its effect on either the quality or the quantity of the product (educated students) is still mainly potential rather than actual.

The same is true of a number of other productivity studies now being undertaken by or in the New Universities. One of the most famous — or notorious, since it has raised apprehensions throughout the British univertisy world — is the feasibility study of the six-term university year undertaken by a sub-committee of the Committee of Vice-Chancellors and Principals under the chairmanship of Mr. Frank Thistlethwaite, Vice-Chancellor of East Anglia (which is not necessarily in favour of it). The notion is that a shift system in which only two out of the three under-graduate years were present at any one time would enable the buildings and equipment, now in full use only for about 30 weeks a year, to be used for about 48 weeks (the other four being required for " turn-round " between terms and for major maintenance work). This is of course a mainly quantitative productivity scheme which would enable a university to increase its numbers by about 50% without any significant increase in capital investment. It would not, however, lead to any saving in academic staffing costs, since the UGC has made it clear that members of staff would need to attend for only the same number of terms as the individual student (i.e. four out of the six) so as to get as much time for research as at present, and there would therefore be an equivalent increase in staff numbers. A Lancaster pilot study has shown, in fact, that there would be no saving per student in recurrent expenditure, but that there would be a substantial saving in capital expenditure, equivalent to about a third of the capital cost per student from public funds, or about a quarter of the total capital expenditure per student from all sources. If, however, we allow interest on capital at 8% (a very high and, one hopes, temporary rate), the capital saving per student per annum as a proportion of the total annual cost (recurrent and capital) is only 5.6%.* Against this we must set the additional educational and administrative costs of never having all the students and all the staff present in any one term. Quite apart from the profound change in the concept of a university from an integrated community of learning into a "knowledge cafeteria" and the added costs of communicating with absent colleagues, it would mean either the appointment of duplicate specialists in many subjects or the educationally wasteful reallocation of staff to particular student years. So large an educational disruption for so small a financial saving could be justified only if the need to expand numbers were clearly beyond the capital resources of the nation. For the next few years, until the demographic upswing in university applications in the mid-70's, this manifestly cannot be so. Let us hope that by then the nation can afford to put educational aims above those of marginal economizing.

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* A partial exception to this is Lancaster, where Messrs. Koc and Heywood have merely been absorbed into the new Department of Educational Research and their work on teaching methods and examinations still draws on local experience.

One of the worst effects of the six-term year would be the final closing of the door to an improvement in quality by extending the university year, and thus increasing the student's exposure to education. As we have seen, one side effect of the two-semester (instead of three-term) year adopted at Stirling is that students come into residence for reading and preparation before the full teaching semester begins. Again, Kent as a whole and individual departments and schools elsewhere have adopted a long-vacation term of a month's duration in the summer. These devices are especially useful to the increasing number of students from home backgrounds not conducive to private study, and many students now take the initiative in applying for LEA grants to stay at the university for part of the vacations. A formal requirement to stay up for a longer period, though unpopular with some, would be welcomed by many as ensuring their claim to a vacation grant. In a degree system which attempts to produce honours graduates in 90 weeks of formal study, minus examination periods, during a bare three years, it would be a valuable educational reform.

The New Universities, like the rest, could also improve their productivity, especially qualitatively, by a fuller use of their capacity during term. The use of capacity is the subject of a study by Mr. K.S. Davies, Research Officer to the Committee of Vice-Chancellors, for another subcommittee under the chairmanship of the Vice-Chancellor of Lancaster. His task is to establish simple statistical measures of utilization — for example, the number of class hours per lecture or seminar room per week and the proportion of seats in use per class-room, so as to arrive at an index of weekly student hours per seat — and thus to establish realistic norms by which universities and individual departments can judge their own utilization of teaching rooms, laboratories, and other working spaces. A census of room utilization was taken earlier at Lancaster. Such studies still have a long way to go, but they are already making academics think about the length of the working day and the working week, the use of laboratories by shifts of students from different years, the sharing of lecture theatres and seminars by different departments, and so on. Many of the New Universities, including Lancaster, are already applying some of these devices (especially shared teaching rooms and shift-operated laboratories), and all of them are committed to using the premises for longer than the traditional " nine a.m. till five p.m. " civic university. So far, however, the evenings and weekends have been confined to social rather than academic activities, except of course for private study.

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* Recurrent cost per student at £666 p.a. remains the same. Capital cost per student is reduced from £2,400 to £1,800, and annual interest on capital at 8% from £192 to £144. Total annual cost per student (recurrent and capital) is thus reduced from £858 to £810, a saving of 5.6%.

This last point reminds us that, however desirable it is to increase the shared utilization of university " plant " by lengthening *its* working week and working year (which is not the same thing as the staff's or the students'), universities exist for guided study rather than formal instruction, and students, like university staff, do their most important work outside teaching rooms. We could no doubt improve the statistics of contact hours and room utilization enormously without improving the quality of university education at all. We might, indeed, even worsen it. For the output of universities depends ultimately not on hours of teaching or on numbers of graduates, but on the quality of the men and women who teach there and the quality of what they teach. And that brings us back to the other products of university education, research and community service. It may be that these can be regarded in productivity terms only as bonuses over and above the measurable output of " completed students ". But without the bonus of research, in the broad sense of refreshment from the living stream of human knowledge, there would be no university teaching worthy of the name. As one Vice-Chancellor has said of research,

> There is a justification which appears to me to be (unhappily) valid: and that is that the nation will persistently undervalue the search for knowledge, and can only be persuaded to pay for this contribution to its own state of civilization by slipping in research as an unnoticed by-product of university teaching.*

Any improvement in university productivity which " programmes out " time for research will be pouring out the baby with the bathwater – and where will the next generation be then?

The final word on university planning and finance must concern the increasing control by the State. Dependence on Exchequer Grants for so large a proportion of university income has inevitably brought with it a parliamentary demand for public inspection of how the universities spend their moneys. The latest development in this continuing pressure for Government control, as we have seen, is the opening of the accounts of the universities to the Comptroller and Auditor-General on behalf of the Public Accounts Committee of the House of Commons on 1 January 1968. The New Universities, the first universities in this country to be founded by the State with almost complete dependence on public founds, are naturally in the front line of this advance of State control, and it is perhaps symbolic that the first universities to be visited by officials from the Comptroller and Auditor-General's office, in March and April 1968, were Sussex and Lancaster. The visits, by a Director and Deputy Director of Audit, and four Auditors who did the actual work, were chiefly exploratory, to discover how the universities keep their accounts and control the flow of expenditure rather than to question why they spend their money as they do, and relations between them and the financial administrators of the universities were entirely amicalbe. The fact remains, however, that the universities have lost their unique privilege of spending large sums of money without having to account for it except by the same kind of private audit to which public companies are subject. The measure of the change will appear when the Comptroller and Auditor-General finds something to question, and the accounting officer responsible for answering the Public Accounts Committee's interrogation is not the Vice-Chancellor of the university concerned nor the Chairman of the University Grants Committee but the Permanent Secretary of the Department of Education and Science. This is the end of a chapter in the history of the relations between the State and the universities, and also the beginning of a new one. What will it mean for the development of higher education not only in the New but in all the universities of the United Kingdom?

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* C.F. Carter, 'Can we get Higher Education Cheaper?' *Manchester Statistical Society*, December 1965, p. 10

CONCLUSION

The ten New Universities treated in this study were and are innovations in themselves, and their very existence has had an influence on the whole system of higher education in the United Kingdom. They have had this influence not because they are uncaused causes of change but because they are centres of experiment thrown up by and still rooted in the existing university system; in the language of economic planning, growth points which, because of their newness, flexibility and freedom to experiment, have been able to draw together from the older universities many of those academics and administrators most interested in change. Their unique position as autonomous yet State foundations in a period of unprecedented investment in higher education has guaranteed them the resources to plan in confidence for rapid growth, and their unique right to grant from the beginning their own degrees and determine their own structure and organisation and their own methods of teaching and assessment has given them the freedom to plan and experiment. Because of these unique privileges, we said in the Introduction, the New Universities are the best hope of substantial innovation in British higher education in the last century and a half. To what extent, as shown by this report, are they fulfilling that promise?

The New Universities were founded, we saw in Part I, partly to meet the need to expand the number of university entrants and more importantly, as it appeared when we began to explore beneath the surface, to give the existing university system a "shake-up". In the words of Lord Murray of Newhaven, the man most responsible for their foundation, "It was one-third numbers and two-thirds new ideas". On the side of expansion their biggest contribution has been in experimenting with new structures of organisation, forms of residence and physical development designed for growth. Both the collegiate structure of York, Kent and Lancaster and the schools of studies of Sussex, East Anglia, Essex, Ulster and, to a less extent, Warwick, have aims and purposes unrelated to growth, notably to escape from the straitjacket of departmentalism of the older civic universities, but they have the inestimable advantage of allowing growth to take place more easily and flexibly, not only in mere size but in more academic directions, than in the traditional departmental universities. Within this freer structuring for growth we have seen that the cellular or collegiate system offers more flexibility in social organisation, the schools system more in academic organisation. Neither system, however, has completely overcome, nor perhaps should it, the tendency towards departmentalism which is both the strength and the weakness of the academic profession. On balance, it would seem, the collegiate system offers the better chance of uniting the social cohesion of small units with the economies of scale of large universities.

The New Universities, amongst many others, are also experimenting with new forms of student residence. Keele has made the only experiment in modern times in complete residential provision for both staff and students. Socially it has proved a far greater success than many both there and elsewhere feared, but it has been at a cost in slow growth which most planners, including those in Keele, would now consider too high. All the New Universities believe in the social and educational value of as much residential provision as possible, by which they understand something between a third and a half of the students, and their aim has been to provide for this as cheaply as possible. For this reason they have, since Keele, eschewed the traditional hall of residence, with its expensive common and dining rooms and other facilities, used principally at night and at weekends, and have seized the advantage of their ample sites to provide simple blocks of study-bedrooms whose occupants can use the central facilities of the university round the clock, thus fully using one set of amenities instead of under-using two. The particular forms of residence vary between the collegiate, in which the study-bedrooms are an integral part of the teaching accommodation as at York, Kent and Lancaster, and the non-collegiate, in which they are provided in separate blocks, as in the Sussex Park Houses, East Anglia's "ziggurats", the Essex towers and the Warwick Halls. The potential cheapness of this form of residence is strikingly displayed by the Lancaster scheme of privately financed residence, which has halved the capital cost per student place of the traditional hall of residence. One other advantage of on-campus residence is that non-resident students can share some of the privileges of the residents, using the same facilities, and even, as in the Essex Towers and the Lancaster colleges, having a shared study as a day-time home. These arrangements have helped considerably in avoiding the deadness in the evenings and at weekends of the traditional civic "nine till five" university, and have contributed powerfully to the social success of the New Universities.

Social success depends on the attractiveness of the university as an environment in which to live and work, and perhaps the largest contribution of the New Universities to the physical concept of a university is the idea of the integrated pedestrian campus. We have seen how the need and opportunity for a continuous, urban, academic and social complex was thrust upon the New Universities by the isolation and virginity of their sites. We have seen too how the concept evolved from the spontaneous "village" of Keele, through the pedestrian, cellular, concentric or reticulated campus at Sussex and York, to the continuous linear developments at East Anglia and, with futuristic vertical segregation of pedestrians and traffic, at Essex and Lancaster. The linear, continuous, integrated pedestrian campus, though not unique to the New Universities, has been developed furthest there, and is one of their most exciting and fruitful innovations.

Still on the side of expanding student numbers, especially from the less privileged groups and classes in the population, the New Universities have done very little to encourage equality of opportunity for the working class, for the less educationally developed regions, and for women. This is mainly because in the British system no university by itself can do much, though no doubt they ought to do more collectively to reduce social inequalities which are deeply rooted in English society and operate at a much earlier age than that of university entrance. They have done a little to provide more places than the national average for women, but this is probably due more to their student "mix", with no provision in the heavily masculine subjects such as medicine, dentistry, veterinary science and agriculture, and small provision so far in the applied sciences, than to any deliberate policy. Since they have been founded very largely in the already heavily provided South East and Midlands they have done still less to redress the imbalance of the opportunities for university education between those areas and the North and West, only Lancaster and East Anglia showing a more than average proportion of students from their own, peripheral, areas. Regional inequalities, however, stem almost entirely in England, as distinct from Wales or Scotland, from unequal opportunities between the classes. Here the New Universities have a worse than average record, all except Lancaster having a higher proportion of middle-class students than the excessively unequal national average. Although by no stretch of the imagination the results of deliberate policy, it is one which the New Universities ought to search their hearts about and try to redress. The only consolation in it is that the British percentage of working-class university students is so much higher than that of any other Western country.

On the side of new ideas, the New Universities have put their newest and best into the "new maps of learning" which they have drawn and guided themselves by. Keele's map was and still is much the most ambitious, attempting in a crowded four-year course to trace the evolution of the earth in space and of man in the context of Western civilization, to "cross the Snow line" between the "two cultures" by giving every student some understanding of both science and the humanities, and to produce broad specialists in a combination of at least two subjects. The others have taken warning from this heavy task, difficult enough in four years, impossible in the three all but Stirling were allowed, and have attempted much less. Most of them have preferred to concentrate on providing a much broader base of cognate studies than in the traditional honours degree, on which the student could build in the second and third years a narrowing pyramid of specialization. The breadth of the base and the narrowness of the peak differ considerably, from a wide base and a high and narrow peak at Sussex and Kent, through a moderate base and a broad, flat peak at Lancaster and Stirling, to a narrow base and a high, narrow peak at York and Warwick. In addition, several of them emulate Keele in "crossing the Snow line" with cross-disciplinary courses such as the "breadth subject" or "distant minor" at Lancaster, the Arts-Science scheme at Sussex and the Open Courses at York. It is extremely doubtful whether any university syllabus can redress the overspecialization which is built into the English educational system from about the age of 14 onwards, at least if it is also to turn the same students into employable specialists in three years, and the success of the New Universities in this direction is bound to be limited. Yet in so far as the outside world is increasingly demanding flexible generalists with trained minds which they can turn with fruitful effect to a wide variety of tasks, they may be producing a more useful "product", and certainly one more relevant to the modern world and more capable of making for himself a satisfying career and an enjoyable life, than the perhaps irrelevantly specialized products of some traditional honours schools.

With a few exceptions chiefly in what we have called the "business technologies", the New Universities have not been especially remarkable in introducing new subjects of teaching and research. This, indeed, was not their function. New subjects grow within or at the margins of old ones, and are not created at the behest of institutions. Their main function in this area was to introduce new approaches to and combinations of old subjects, and the new multi-disciplinary schools, of area studies, social studies, and comparative studies on the arts side, and of physical, molecular, biological and of engineering sciences on the other side were sufficiently innovatory. The exceptions are interesting, however, and the new "business technologies" were just at the point when the New Universities were being founded when they could benefit from the systematic study and professionalization which accompanies the establishment of university departments. The New Universities were not the first in the field, being anticipated notably by the Business Schools in London and Manchester. Unlike the latter, however, they did not develop the new subjects in separate institutions but as an integral part of the academic structure of the university on the same terms as other subjects, except for their necessarily greater concentration on post-graduate studies. Lancaster established straightforward Departments of Operational Research, Marketing, Systems Engineering, and Financial Control, and though it is now contemplating uniting them in a Centre for Business Studies under a separate Board of Studies, they will still have the same status and powers as other Departments. Warwick had a School of Business Studies from the beginning, cognate with the Schools of Engineering Science or of Molecular Sciences. Sussex is also integrating Operational Research in its Schools system. Although like the London and Manchester Business Schools they also serve the wider community with post-experience courses for managers, they are likely to develop the "business technologies" more rapidly as fully acceptable academic subjects in the ordinary university sense. The other major specialization worth mentioning here is the Social Science Research Council's Data Bank at Essex University, a research instrument of the utmost significance for everyone working on social survey data not only in universities but in government, industry and commerce.

In the field of university government and administration, at least in the central superstructure, the New Universities have almost all preferred to wear conventional clothes in the interests of concentrating their energies on their less conventional academic activities. They have nearly all adopted the orthodox structure of a wide, predominantly lay Court (though generally without its traditional, if mainly theoretical, supreme power), a small, executive or managerial Council of laymen and academics as the principal authority over finance and appointments (though generally with only a very small lay majority), and a wholly academic Senate with a majority of Professors together with elected non-professors (though three of them, East Anglia, Essex and Warwick, have followed a recent precedent in adopting a small, elective Senate). The only exception is York, where a two-tier academic authority, with a small, elected General Academic Board, mainly non-professorial, has general control over academic affairs, subject to the ratification of a Professorial Board, which retains control over appointments and promotions. In addition to non-professors, students are now represented on Court, Council and Senate at Sussex – the first university in the United Kingdom to take this step – and are invited to attend for certain items of the agenda of Council and Senate at East Anglia and Lancaster, at which last place full representation has now been agreed by all parties.

The organisation of the New Universities begins to differ significantly from that of the old at the lower levels of government. Here the schools of studies at Sussex, East Anglia, Essex, Warwick and Ulster and the colleges at York, Kent and Lancaster demand a different organisational structure from the traditional faculties of the older civic universities. The schools and the somewhat similar boards of studies at the non-school universities (called, somewhat misleadingly, faculties at Kent) have certainly reduced the barriers between subject groupings, at least within the new, wider units, though less so between them. Departmentalism remains powerful, however, and, especially on the science side, schools have tended to become "super-departments" and the deans "super-heads of department", and science boards of studies have jealously guarded their right to be different from the arts side. It is most visible, naturally, in the departmental universities, York, Lancaster, Stirling, and (in spite of its schools terminology) at Warwick. Non-academic organisation, for social and disciplinary purposes, remains as big a problem as ever in the schools universities, but has been much mitigated in the collegiate ones, where the smaller social units represented by the colleges offer an alternative to the "one big students' union" and to the concentration of discipline in a few, mainly academic hands.

The remuneration and status of university teachers in the New Universities have also been orthodox, for the very good reason that they are nationally determined by the University Grants Committee and the Privy Council which, on the former's advice, grants university Charters and Statutes. The success of the New Universities in recruiting staff of high calibre has been entirely due to the opportunities they offer for innovation and experiment with academic organisation, curricula, teaching methods and assessment, social organisation, and with buildings and the physical environment.

One of their attractions for staff has been the relatively high research effort they have managed to attain, as manifested by the relatively high proportion of post-graduate students. The New Universities have broken the old tradition that new institutions remain for a long time small, mainly under-graduate-teaching establishments. They have done this partly by offering new subjects for research not easily to be found elsewhere, such as the "business technologies", motor and control engineering, ceramic technology, and structural social history, and partly by seizing on the comparatively new development of one-year taught courses for the M.A. and M.Sc. They have also shown great initiative in tapping funds for research, partly from orthodox Government sources but also from industry, notably in the form of mutually beneficial research contracts, especially in the "business technologies" and unorthodox varieties of engineering.

What the New Universities are most renowned for, apart from new curricula and subject combinations, is their experimental attitude to teaching methods and assessment, especially the latter. In the former they all place a great deal of emphasis on discussion teaching in tutorials and seminars, but this is now the trend throughout higher education. More innovatory is the introduction, at Keele, Sussex, East Anglia, Kent, Warwick, York and Stirling, of jointly-taught courses by specialists from different subjects, most unconventionally in the joint seminars in the Foundation Year at Keele and in the arts-science teaching at Sussex. The new fashion for "educational technology" is represented by the UGC's nomination of three New Universities amongst the ten "high activity" centres for the development of audio-visual aids, York and Essex for mechanized language teaching and Sussex for "multi-media". At Sussex the excitingly innovatory Centre for Academic Services brings to bear the expertise of a wide variety of specialists in every kind of aid from television to programmed learning on the problems of teaching particularly large and difficult courses. Apart from Keele which offers a short course for new staff in teaching techniques and East Anglia which has a Professor of Chemical Education, the New Universities have not been remarkable for the in-service training of university teachers. They have, however, shown more initiative in the formal study of higher education, and Keele, Essex and Lancaster were three of the first four universities to make full-time appointments in higher educational research. The difficulties of pursuing this kind of research in the institution to which the researcher belongs are illustrated by the winding up of the research teams as separate units, and the diversion of their members' attention into more general and safely extra-mural research. An exception to this is the Socio-Educational Research Unit at Sussex, which is concerned with the less disturbing collection of statistical and mainly sociological information.

East Anglia was singled out by the Hale Committee on University Teaching Methods as the pioneer of "continuous assessment", by which the student's course work is taken into account equally with examination results in the final classification of his degree. Its lead has been followed, somewhat less formally, by Lancaster, York, Essex, Warwick and Stirling, with only Keele, Kent and Sussex retaining the orthodox, almost exclusive reliance on examinations. The system is successful, in that it has not been found unacceptable to external examiners, is popular with students in spite of the additional pressure to produce regular, assessable written work, and has been found to reduce "wastage" rates by giving early warning of potential failure and the possibility of remedial action. Keele, Essex, York and some departments at Lancaster have also experimented with unorthodox examination techniques, including "objective tests", advance notice questions, "open book" examinations, and the substitution of projects and long essays for individual written papers.

The current wave of "student unrest" has not left the New Universities unaffected, and has ruthlessly put to the test their experimental arrangements for maintaining student discipline and for fostering staff-student relations and mutual understanding. In particular, it has sorted out the sheep from the goats in two different polarizations, by psychological attitude of the authorities to students and by institutional organisation of staff-student relations. In the first, the difference has been thrown into relief between the traditional, paternalistic administrations, which regard students as children to be protected and disciplined for their own good and excluded from participation in university government and above all from responsibility for discipline, and the, in theory at least, "progressive", equalitarian administrations, which involve students as much as possible in university affairs, especially in policy making and discipline. Across this line of polarization, however, lies another, which corresponds to the organisational difference between unitary, centralized universities with only academic sub-divisions, and the collegiate, decentralized ones with a second infrastructure of social and disciplinary sub-units. It is interesting to see which of the four resultant types of university, the paternalistic centralized and decentralized and the "progressive" centralized and decentralized, have stood up best to the challenge of student unrest. Curiously enough, the openly paternalistic, which seemed most provocatively ripe for anti-authoritarian rebellion, have had as yet least trouble — though that is no more guarantee of immunity than Gaullism proved to be in France — and in the case of York and Kent, and perhaps of Keele where complete on-campus residence gives to the hall a similar character, this may be due to the close staff-student relations of the collegiate system.* Lancaster, the other collegiate university, belongs to the other pole in psychological attitude, treating students very much as adults and involving them at all levels of university government. There the largest source of unrest has been a small group of students who want adult rights without adult responsibilities, and persistently break the rules of confidential discussion by prematurely releasing information to the press, often in a garbled and sensational form, for money. The most encouraging aspect of the ensuing crises there has been the responsibility and loyalty to the whole community of the vast majority of students, and their indignation not against the university authorities, but against the disloyal and mercenary students. This is perhaps a better foundation for a permanent system of civilized behaviour than paternalism, however, well-meaning. On the other hand theoretical progressivism which breaks down in practice is perhaps the worst. Certainly, the New University which has been loudest in its claims of treating students and staff on equal terms has the worst record of staff-student relations, culminating in near-breakdown and the insurrectionary establishment of the "free university" of Essex in May 1968. To an outside observer who noted the rumblings of student discontent there as early as October 1967, this cannot seem unconnected with the highly centralized structure of staff-student relations, especially the system of discipline, theoretically representative but in practice authoritarian. Such a combination of egalitarian theory and hierarchical practice cannot but be explosive. Sussex and East Anglia represent the fourth combination of genuine progressive theory and centralized structure. They too have had their difficulties but, like Lancaster, chiefly from an unrepresentative, vociferous minority, mostly repudiated by the majority of students. Centralization of staff-student relations has no doubt made these manifestations potentially more dangerous, in that capture of the single representative apparatus would have enabled the irresponsible minority to do more damage than they have so far been able to do, but in practice the genuine involvement of responsible, elected student representatives at all levels of the governmental and disciplinary structure has been an effective antidote. In staff-student relations and especially in the evolution of student self-discipline the New Universities have been a laboratory in which almost every variety of experiment has been tried, and from which all the rest may draw their own conclusions.

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* Since this was written both Kent and York have experienced "student unrest", with threatened strikes and "sit-ins" organised by militant groups of students — cf. *The Observer*, 2 June 1968, and *The Guardian*, 26 June 1968.

They have also perforce been a laboratory for experiment in relations between the academic world and the world outside. Because they were founded close to comparatively small communities with little or no previous experience of university teachers and students living in their midst they experienced a compressed and somewhat emotional evolution of relations with the local public. This began with a honeymoon of goodwill and great expectations, rapidly degenerated into the disillusion of hopes disappointed, and finally recovered to a more sober and realistic assessment and acceptance of each other's roles and contributions. Most of them have already reached the stage where they can live up to the British university tradition of service to the community, providing public lectures, concerts, dramatic productions, exhibitions and the like on the cultural side, and on the academic side research services to local industry, educational contacts with and in certain cases academic help to local colleges and schools, and opportunities for further education in the form of part-time post-graduate degree courses. The New Universities, like the rest, have also come to provide services to a still wider world, notably in the shape of research contracts and consultancy work for regional and national industries and government departments, and the "business technologies" in particular, recruited as they have been from industry, have developed a special *rapport* with the businesses with which they work. Finally, a large part of the energy and efforts of university staffs has gone into making, maintaining and improving contacts with the State, especially with the Department of Education and Science and the Research Councils, on which more than on anything else the survival and well-being of all the universities depend.

Planning and finance, last of all, are dominated overwhelmingly by the State, and the scope for innovation in these areas is strictly limited. Given the dependence of British universities for over 70% of their recurrent income and over 90% of their capital investment on Parliamentary Grants, planning is necessarily confined to persuading the University Grants Committee to accept a quinquennial submission based on projected student numbers. With their need and opportunity to expand rapidly from very small to comparatively large institutions the New Universities have had to develop more systematic and self-conscious systems of planning than have been hitherto customary, exemplified most specifically in the technique of logistical planning evolved at Sussex, and followed in greater or lesser degree at nearly all the rest. This technique, which relates nearly every aspect of expenditure, from staff salaries to usable superficial area of buildings, by known statistical formulae to projected student numbers, is an invaluable tool of planning in an expansionist situation, though it is admittedly less valuable in a period of decelerating growth or stagnation. Increasing State control of universities is furthered by the inauguration of Parliamentary accountability on 1 January 1968, and symbolized by the visits of auditors from the office of the Comptroller and Auditor-General to Sussex and Lancaster in the following Spring. Once again the New Universities, founded and financed by the State yet ostensibly autonomous, are seen to be in the vanguard of progress, even when "progress" is in what some would regard as a retrograde direction.

Just how much the New Universities have given a "shake-up" to the rest of the university system it is still too early to say. Many of their innovations, such as the integrated pedestrian campus or their new maps of learning, would in the nature of things take many years to transplant elsewhere. Others, however, such as the Lancaster scheme of privately financed student residence or the involvement of students in university government, are already being discussed and taken up by other universities, though not always in conscious or detailed imitation. The problem of tracing the inauguration and dissemination of innovation in universities is that in so interconnected an intellectual environment it is almost impossible to establish the provenance of a new idea, or even the place and time at which it was first put into practice. All that can be said is that the New Universities by their very newness have had more opportunity than the old to try out more of the new ideas that have been abroad in the university world, and their success and failure have been closely watched by the rest. Meanwhile, their very existence has in one sense given a profound "shake-up" to the rest: their recruitment of academic staff at all levels of the profession has caused, as no ordinary expansion of existing institutions could, a migration of scholars on a scale not seen since the middle ages, if then, with as profound effects on the exporting as on the importing institutions. This report began with a quotation from Professor Herbert Butterfield, Master of Peterhouse, Cambridge, from the lectures he gave, appropriately enough, at the University of Keele in 1961: "If there are to be radical changes or even interesting experiments, it would seem that these can emerge only in the newest universities of all". This was because "older universities are too committed to existing systems". Soon the New Universities of the 1960's will become older ones and will be committed to existing systems. If they cannot learn any better than previous new universities to remain flexible and to continue to make radical changes and interesting experiments, then the conclusion of this report must be that for the health of the university system, to prevent hardening of the academic arteries and stagnation of the scholastic and scientific bloodstream, there ought to be once in every generation the founding of a wave of New Universities as numerous and experimental as those of the United Kingdom in the 1960's.

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